

The American Neptune



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THE AMERICAN NEPTUNE

A QUARTERLY JOURNAL OF MARITIME HISTORY



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THE AMERICAN NEPTUNE

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VOLUME II

JANUARY, 1942

NUMBER 1

EIGHTY-NINE years ago Commodore Perry's expedition established formal contact between Japan and the United States. Fourteen years later, in 1867, regular steamship service was established across the Pacific to Japan and China by the great wooden side-wheelers of the Pacific Mail Steamship Company. The history of this service, written in peace time by Dr. Kemble, has an even greater significance for us since the attack of 7 December 1941 has focused the interest of every American on the Pacific. Following closely upon the completion of transcontinental railways, these steamers marked the beginning of regular communication in the modern sense between the United States and the Far East.

The 'white sails crowding' of square-riggers have captured the imagination of men that no longer see and know the ships themselves. By contrast the steamship is uninviting, yet it is equally a part of American maritime enterprise. Fortunately during the past forty years a few historically minded collectors have been assembling paintings, prints and photographs of all types of American steamships, and the two outstanding collections of this sort are now permanently preserved in institutions. The Mariners' Museum has recently purchased the collection of Elwin M. Eldredge, from which several of Dr. Kemble's illustrations have

been derived, and this, with the Francis B. C. Bradlee collection, bequeathed to the Peabody Museum in 1928, will furnish illustrative material for the steamship histories of the future.

Returning to the days of sail, the present issue includes descriptions of small craft of the Mediterranean and West Indies, and accounts of disasters at sea in 1802 and 1900. In the earlier of these disasters the ship was lost; in the later one she arrived home safely in extraordinarily good time, thanks to the resourcefulness of her master, who not only replaced but improved upon a lost rudder. Mr. Colcord's account of the jury rudder of the *Guy C. Goss* brings to light a forgotten chapter in the history of a well-known Maine bark, which reflects great credit upon her master, Captain Walter M. Mallett, one of the men who remained in sail until the end. The fact that this story has, for forty-two years, remained known only to the people who participated in it, suggests that there are many similar accounts of American maritime enterprise that should be recorded before they are permanently lost.

To compensate for accounts of disasters, the Editors are happy to be able to present the recipe for rum punch of one of the great Salem merchants. Joseph Peabody's punch has been a welcome addition to many gatherings for well over a century. At the one hundred and seventy-fifth anniversary dinner of the Salem Marine Society (of which Mr. Peabody was once a member) on 30 October 1941 the Peabody punch was prepared from the original formula, but as wartime conditions make such literal adherence to tradition difficult, Mr. Loring has devised and published the recipe for an inexpensive but excellent substitute for his great-great-grandfather's punch.

Side-Wheelers Across the Pacific

BY JOHN HASKELL KEMBLE

Pomona College

IN the decade between 1865 and 1875 regular steamship service was established from San Francisco across the Pacific to Japan and China. Aided by a generous government subsidy, the Pacific Mail Steamship Co. despatched its first vessel westward through the Golden Gate at the beginning of 1867. During the pioneer years, a multitude of problems were met and solved in the fields of marine architecture and engineering as well as those of passenger and cargo demands and revenue. A revolution was under way in American ship construction, and although the service was opened with wooden side-wheelers, by 1875 iron hulled screw steamers were operating across the Pacific. Thus the type of vessel which inaugurated the Pacific Mail's Oriental service was soon superseded. The period was not without significance, however, for those great wooden ships, with their shining black hulls and snowy canvas, their red paddle-wheels and gleaming brass work began a tradition in trans-Pacific communication which lived on long after they had departed from the seas.

The coming of this service to the Pacific lagged about thirty years behind the first steamship lines across the Atlantic. Greater distances were involved, and trans-Pacific commerce was little developed in the first half of the nineteenth century. With the coming of a large Anglo-American population to the west coast of the United States in the late forties, an impetus was given to proposals for regular service across the Pacific. From 1845 onward there were constant schemes and recommendations for steamship lines from San Francisco to the Far East.¹ The first steamers

¹ *Mail Routes — New York, 1845-1849*, pp. 366-367. Ms., Library, Post Office Department, Washington, D. C. *Steam communication with China and the Sandwich Islands*, Report No. 596, To accompany Joint Resolution H. R. No. 28, 30th Cong., 1st sess., May 4, 1848 ([Washington, 1848]). [Ambrose W. Thompson], *Steamers between California, China and Japan, with a map showing all the British steam lines* (n.p., [1853]). *The San Francisco Commercial Press on a Steam Mail across the Pacific, 1860* (San Francisco, 1861). *Memorial of the Oriental and Pacific Steam Navigation Co., for a Mail Route between San Francisco and China, via the Sandwich Islands . . .* (San Francisco,

crossed from California to Australia in 1853 and to China in 1862, but there was no regular line.²

In 1865, the long years of discussion came to an end, and the actual establishment of a regular trans-Pacific steamship line commenced. With the beginning of construction of the trans-continental railroad, there was increased interest in service across the Pacific, and the aid of the United States government for the project was finally obtained in the last months of the Civil War. On 17 February 1865, Congress passed 'An Act to authorize the Establishment of Ocean Mail-Steamship Service between the United States and China.' This directed the Postmaster-General to arrange a contract for monthly service between San Francisco and China with calls at the Hawaiian Islands and Japan. The contract would run for ten years, and no bid for more than \$500,000 a year would be accepted.³

To the advertisement of the Postmaster-General there was but one satisfactory response. This was from the Pacific Mail Steamship Co., and on 28 August 1865 the bid was accepted by the Post Office Department. Under it the Pacific Mail agreed to make twelve round trips annually between San Francisco and Hongkong, with calls at Honolulu and Kanagawa.⁴ For this service, the steamship company asked the maximum amount allowed by the law, \$500,000 a year, and this sum was granted. The company proposed to build four steamers of between 3,500 and 4,000 tons, or considerably larger than required, to carry out the specified voyages.⁵

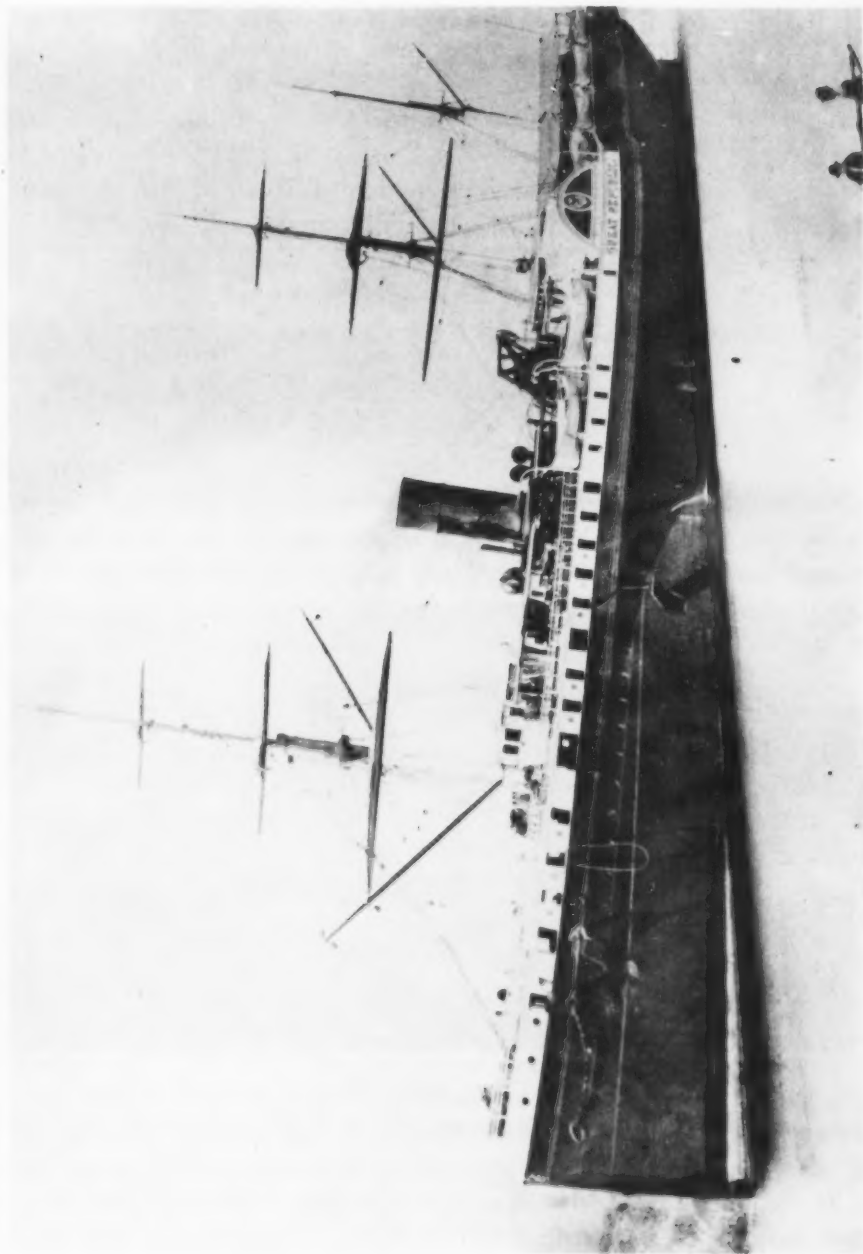
1853). [San Francisco] *Prices Current and Shipping List*, 9, 15 September 1854. *San Francisco Daily Alta California*, 19 January 1857. Hereafter cited as *Alta*.

² *Monumental City* cleared San Francisco for Australia 15 February 1853. *New Orleans* cleared for same destination 8 March 1853. *San Francisco Prices Current and Shipping List*, 15 December 1852, 31 January, 9, 15, 22, 28 February, 10 March 1853. *Cortes* sailed San Francisco for Shanghai 14 April 1862. *Columbia* sailed for same destination 17 April 1862. *Alta*, 11 March, 7, 12, 15, 16, 18 April 1862.

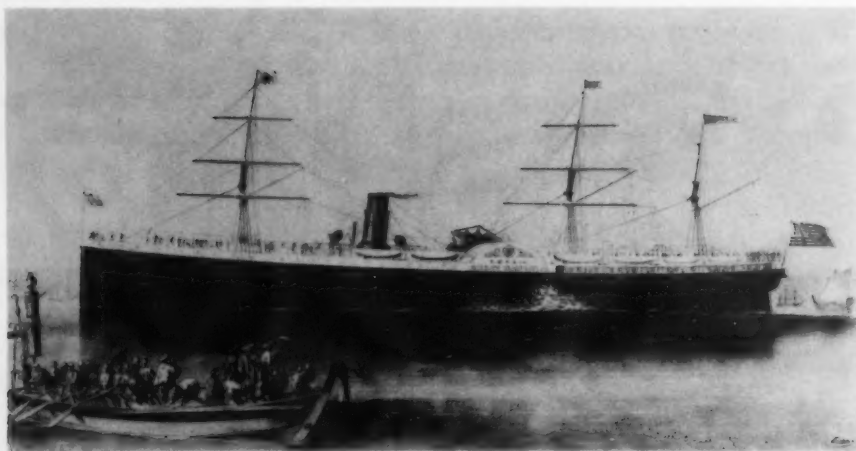
³ The Postmaster-General was required to advertise for bids for sixty days in newspapers on the Atlantic and Pacific coasts. The ports of call in Japan and China were not named in the Act. The contract was to go to the lowest responsible bidder who could offer good security for its performance. Enough steamers of at least 3,000 tons burden were to be supplied to make twelve round trips per year, the ships being subject to naval inspection before acceptance. A mail agent was to be carried on each voyage free of charge. The contract was to go into effect on or before 1 January 1867. 13 *U. S. Stat. at L.* (1866), 430.

⁴ Kanagawa, one and one-half miles north of Yokohama, was originally opened as a treaty port. Because the Japanese government feared clashes between foreigners and Japanese at this then busy place, actual leases of land were given to foreigners at Yokohama, in 1854 an insignificant fishing village across the bay. Although Kanagawa was usually named in official documents, Yokohama was the port actually used by foreign commerce, and it was there that the Pacific Mail steamers called.

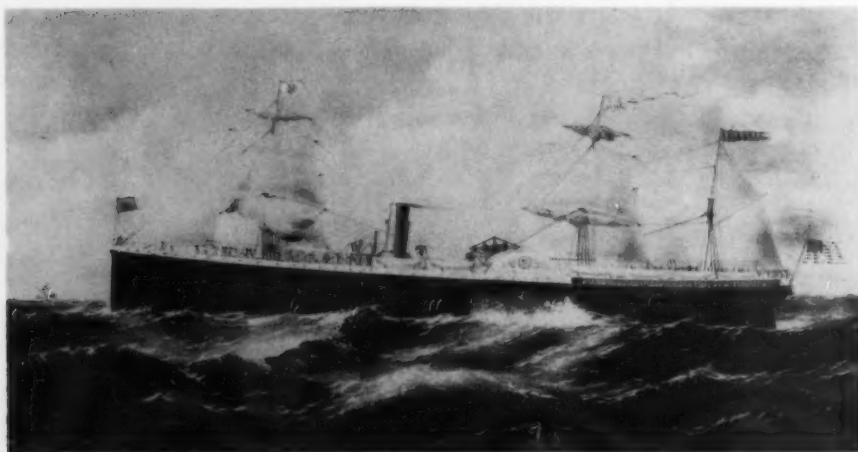
⁵ *The annual report of the Postmaster General of the United States for the fiscal year 1865* (Washington, 1865), p. 11. *Alta*, 31 August 1865.



Great Republic, 1866-1867



Great Republic, 1866-1867



China, 1866-1867

Reproduced from lithographs in the M. H. de Young Memorial Museum, San Francisco

It was not a matter of surprise that the Pacific Mail was the only bidder for the trans-Pacific contract in 1865. At that time, it was the only important American steamship line in the Pacific, and its facilities afloat and ashore gave it a great advantage over any possible competitor in such a project. The Pacific Mail Steamship Co. had been founded in 1848 by a group of New York merchants headed by William Henry Aspinwall. Its original purpose had been to operate steamers from Panamá to the Columbia River under a government contract obtained by Aspinwall in 1847. With the great emigration to California which began in 1849, the Pacific Mail did an enormous business in carrying passengers, mail and express between San Francisco and Panamá. Although it often faced strong competition, the pioneer company remained the undisputed leader in the trade, and in 1865 expanded to operate the steamers from New York to Aspinwall, on the Atlantic side of the Isthmus of Panamá. With sound financial backing, an extensive fleet of steamers and adequate shore arrangements to care for its vessels, the Pacific Mail was well equipped to extend its services to the Orient.⁶ As the trans-continental railroad approached completion, the Pacific Mail could look forward to the day when the traffic on its Panamá lines would be reduced, and the establishment of a trans-Pacific service might help to maintain the otherwise depleted revenues of the company.

To perform the run thus proposed, the Pacific Mail undertook to build four steamers. They were indeed remarkable vessels, representing the apogee of an important type of naval architecture. American ocean-going steamships of the middle nineteenth century were primarily seaworthy adaptations of the river and sound steamers being built in the United States at the same period. Contemporary British ocean steamships had the hulls, rigging and appearance of sailing vessels to which steam power had merely been added. The American ships were primarily steamers, with sails apparently as well as actually merely auxiliaries. These Pacific Mail monsters were the largest wooden commercial steamers ever built, and were the last great ocean steamers to be driven by paddle-wheels. Although they were outmoded even at the time of their building, they were splendid examples of their type, and gave effective service in the run for which they were designed. Their tonnage was larger than contemporary steamers of the great British mail lines, but they evidenced their strong construction by the manner in which they met the

⁶ John Haskell Kemble, 'The Panamá Route to the Pacific Coast, 1848-1869,' *Pacific Historical Review*, VII (1938), 1-13.

gales of the North Pacific and the typhoons of the China coast.⁷ They were famed for the comfort and spaciousness of the passenger quarters, and at the same time possessed adequate cargo capacity.

During the years 1866-1869 the Pacific Mail built the steamers *America*, *China*, *Great Republic*, and *Japan* for the trans-Pacific service. They were constructed in pairs; *China* and *Great Republic* were completed in 1867, *Japan* in 1868, and *America* in 1869. All of them except *China* were built at the yard of Henry Steers, Greenpoint, Long Island. *Great Republic*, first of the quartette, was launched on the morning of 8 November 1866. The ceremony was witnessed by a crowd of about 2,000 'including quite a concourse of ladies, many of whom availed themselves of the opportunity and were launched with the vessel.'⁸ *China*, which was christened *Celestial Empire*, and bore that name until after her trial trip, was a product of the yard of William Henry Webb, whose famous establishment was on the Manhattan side of the East River.⁹ *Japan*, which was originally known as *Nippon*, was launched by Steers in 1867,¹⁰ from whose ways *America* followed on 23 July 1868.¹¹ (Plates 1-7.)

The steamers measured approximately 4,000 tons gross, just over 360

⁷ Among the significant contemporary British mail steamers were the following:

- Cunard, *Scotia*, built 1862, 3,871 tons, iron, paddle.
- Russia*, built 1867, 2,959 tons, iron, screw.
- P. & O., *Mongolia*, built 1865, 2,833 tons, iron, screw.
- Deccan*, built 1868, 3,429 tons, iron, screw.
- R. M. S. P., *Rhone*, built 1865, 2,738 tons, iron, screw.
- Danube*, built 1865, 2,000 tons, iron, paddle.
- Neva*, built 1868, 3,025 tons, iron, screw.
- Nile*, built 1868, 3,039 tons, iron, screw.

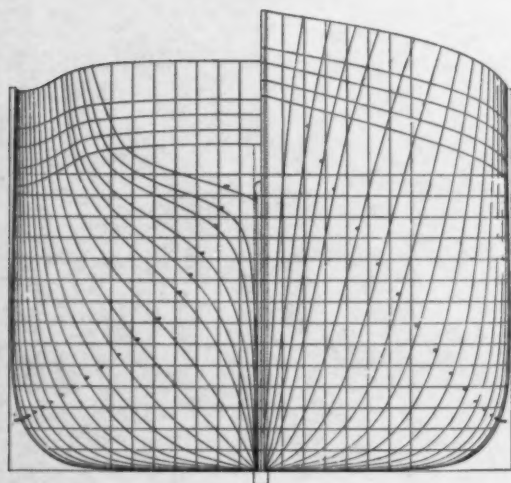
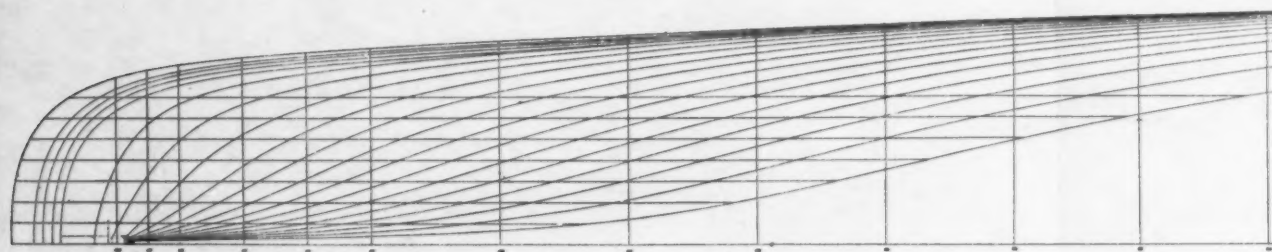
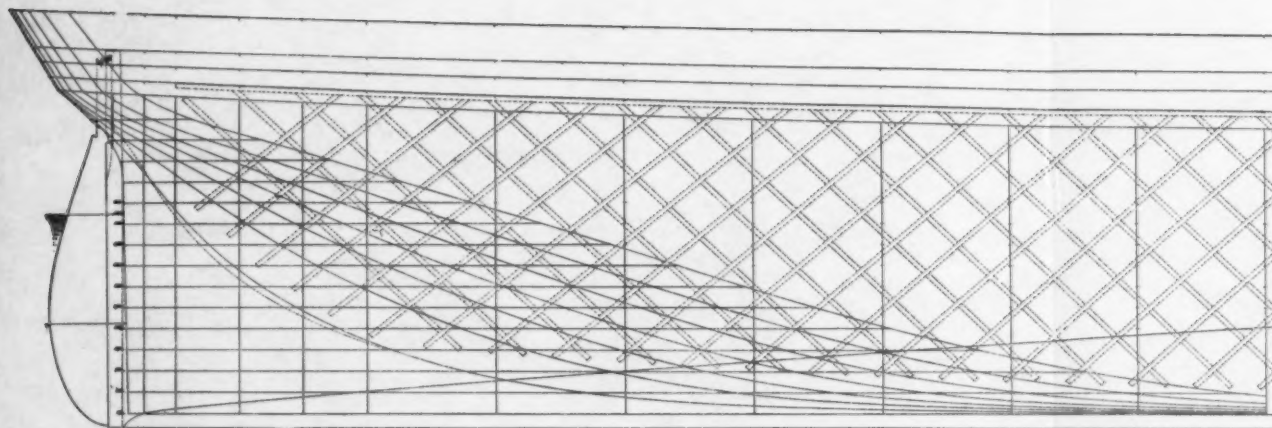
⁸ *The annual report of the Postmaster General of the United States for the fiscal year 1866* (Washington, 1866), p. 7. *Harper's Weekly* (24 November 1866), p. 742.

She cleared New York for San Francisco on 18 May 1867. *New York Herald*, 19 May 1867.

⁹ Keel laid 13 January 1866; launched 8 December 1866; went on trial trip 4 June 1867; sailed New York for Panamá and San Francisco 1 July 1867. William Henry Webb, *Certificates*, II, 133-133a. Ms. Webb Institute of Naval Architecture, New York. Hereafter cited as Webb, *Certificates*. *New York Herald*, 5 June, 2 July 1867. The lines of *China*, published in *Plans of Wooden Vessels . . . built by William H. Webb* are reproduced on the folding plate accompanying this article.

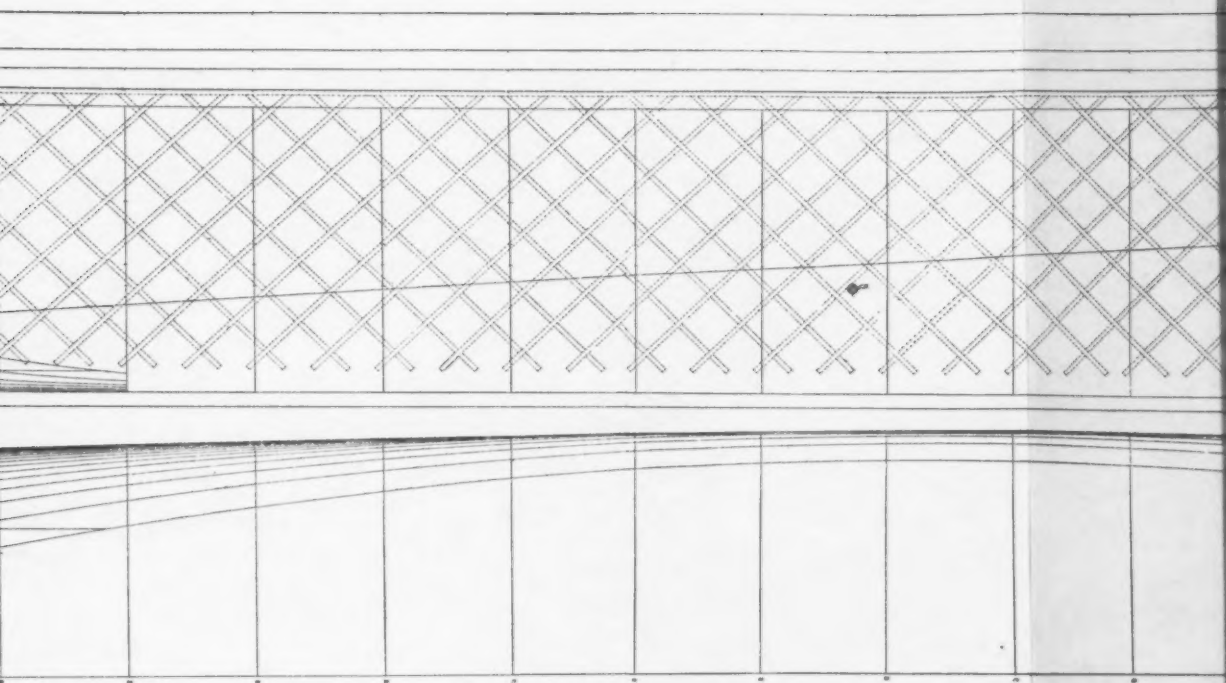
¹⁰ Launched 17 September 1867; cleared New York for San Francisco 11 April 1868. *Ibid.*, 18 September 1867, 12 April 1868.

¹¹ *America* was ready for service by May 1869. She left her dock at New York on 27 May, and went to sea on 28 May. Reaching St. Simon's Bay, South Africa on 5 July, she sailed once more on 7 July, and having passed Reunion Island on the eighteenth, she entered the Straits of Malacca on 1 August, and anchored in Singapore Roads on the fourth. *America* sailed from Singapore on 14 August, and arrived at Hongkong on the twenty-first. Her first trans-Pacific voyage was therefore made eastbound, departing from Hongkong on 18 September, and arriving at San Francisco on 20 October 1869. From New York, she carried four passengers, but no cargo, the holds being filled with coal. At Singapore she took on two hundred Chinese passengers for Hongkong, as well as general cargo. From Hongkong, she carried passengers, mail and cargo. Anonymous, *Pacific Mail Steamship "America" from New York to Hong Kong, May 1869 [27 May 1869-26 December 1869]* Ms. made available through the courtesy of Alfred W. Paine, *passim*. Hereafter cited as *America*, *Journal*. *New York Herald*, 28 May 1869. *Alta*, 8 August 1869.



China, 1866

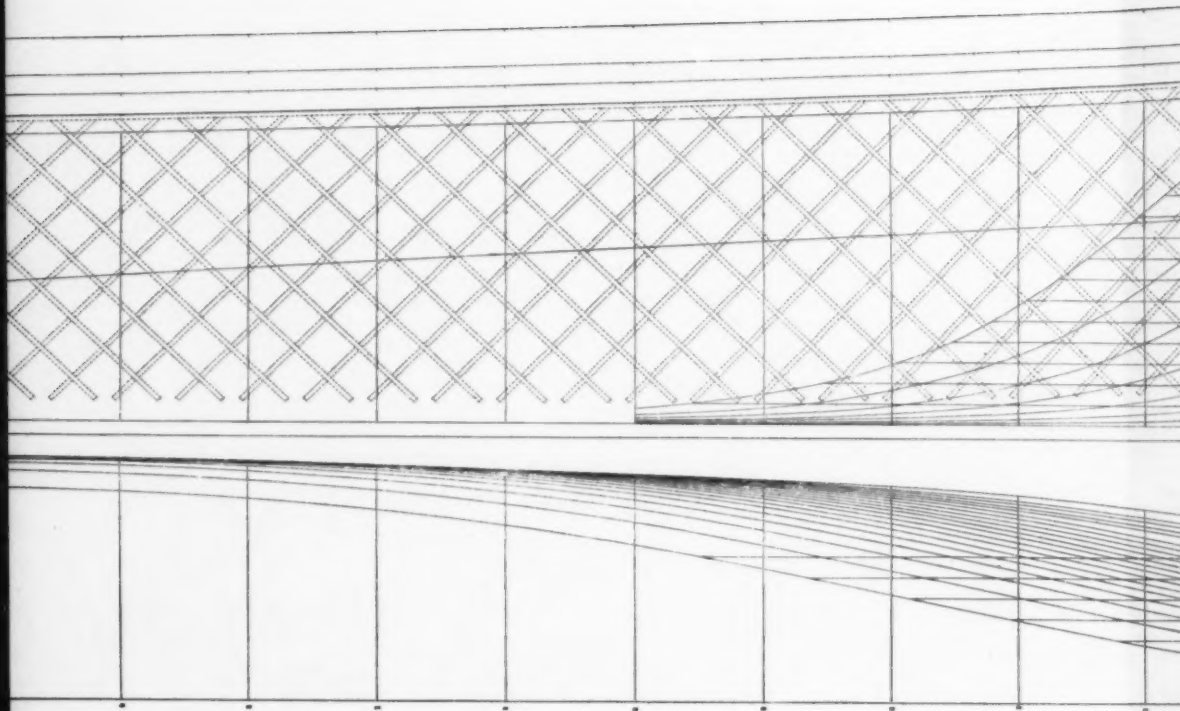
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China, 1866-1867, reproduced from William Henry Webb, *Plans of Wooden Vessels*

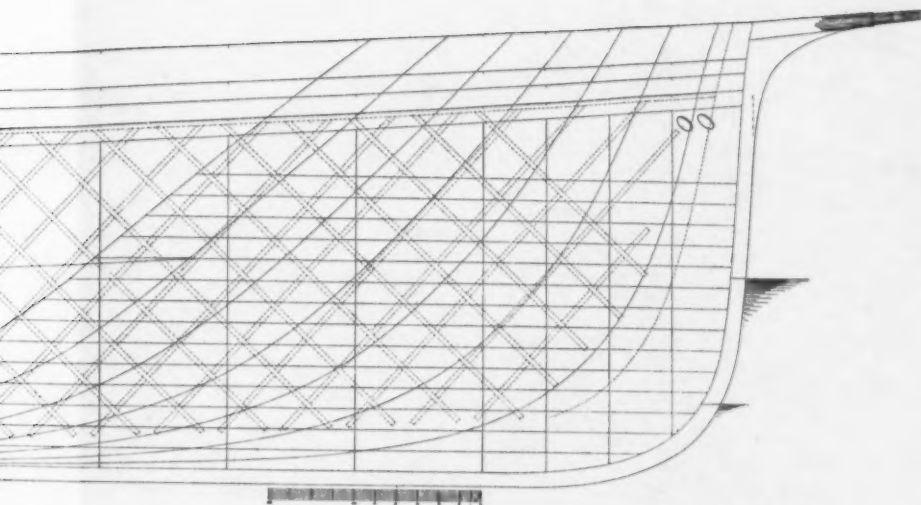
Scale: 1" = 18'

Side-wheel Steamer *China*, built for the Pacific Mail Steamship Co. for regular mail and passenger service. She had accommodations for 1,200 passengers, was a very beautiful model, a remarkably good sea-boat, and with high speed on a very moderate consumption of coal; gave great satisfaction and was the model ship. Her sailing draft with two anchors, 5,000 pounds each, and two chain cables 120 fathoms each on board, and water, aft 9 feet 10 inches. Draft with coal 2,107 tons, cargo and extra machinery 105 tons = 2,212 tons (2,212 tons). The vessel has double outside planking from keel to wale height.



as of Wooden Vessels . . . (New York, 1897), Volume II.

oil and passenger service between San Francisco, Japan and China;
 ly good sea-boat, and proved a very superior vessel in every respect,
 nd was the model steamer of the Company for that service. Launch-
 ach on board, and without any machinery was forward 8 feet 5 inch-
 ns = 2,212 tons (2,240 pounds each): was 20 feet 4 inches. This ves-



CHINA

1869

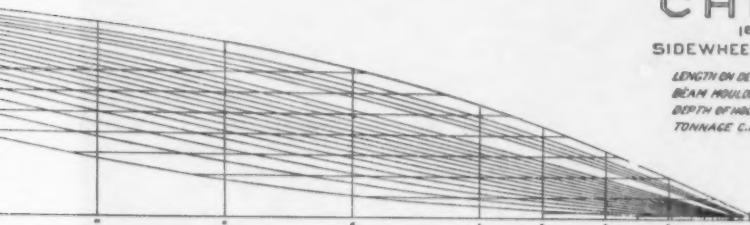
SIDEWHEEL STEAMSHIP

LENGTH ON DECK.....363 FT. 8 IN.

BEAM MOULDED.....18 - 9 -

DEPTH OF HOLD.....31 - 4 -

TONNAGE G.M.....3000 tons



feet in length, 47 to 49 feet in beam, and about 23 feet in depth.¹² Their wooden hulls, although heavily built, were handsomely modelled. The entrances and runs of the vessels were sharp, and the total effect of the hulls themselves was very fine. Within the ships were three full decks: main, berth and cargo, with an orlop deck extending fore and aft of the engine room bulkheads. In *China* there were four transverse bulkheads dividing the ship into five water-tight compartments; there were but two bulkheads carried up through the cargo deck in *America*, forming three compartments. The hulls were braced with diagonal iron bars throughout.¹³

In general appearance these trans-Pacific vessels did not differ greatly from contemporary Pacific Mail vessels on Atlantic and Pacific coastwise runs. They were designed, however, for more boisterous seas, their main decks being enclosed forward of the paddle-wheels and their upper works less extensive than on the other ships. The guards were not built so far out from the sides of the hull as in the coastal steamers.

The Pacific Mail's China liners were driven by side paddle-wheels, with vertical walking beam engines built by the Novelty Iron Works of New York. On all four steamers, the diameter of the single cylinder was 105 inches, and the stroke of the piston 12 feet. These engines were rated at 1,500 horsepower, driving paddle-wheels 40 feet in diameter. Steam was supplied by four horizontal, tubular marine boilers placed forward

¹² *America*. 4,454 9/100 tons. 363 x 49.3 x 23.3 feet. Length over all 380 feet. Extreme beam 50 feet.

China. 3,386 12/100 tons. 360 x 47.4 x 22.9 feet. Length over all 370 feet. Extreme beam 49 feet, 10 inches. Load draft 20 feet, 4 1/2 inches.

Great Republic. 3,881 83/100 tons. 360.3 x 47.4 x 22.8 feet. Length over all 380 feet. Extreme beam 50 feet. Load draft 20 feet, 9 1/2 inches.

Japan. 4,351 72/100 tons. 362 x 49 x 23 feet. Length over all 385 feet. Extreme beam 50 feet. Load draft 18 feet.

Tonnage, length, beam and depth figures from records of Bureau of Marine Inspection and Navigation, The National Archives, Washington, D. C. Length over all, extreme beam and draft from Webb, *Certificates*, II, 133-133a and contemporary newspapers.

¹³ *America*. Frames of live oak. Bottom and sides to water-line solid. Five keelsons and two engine keelsons, latter 60 x 7 x 5 feet solid. Frame diagonally strapped with iron inside and out. Ceiling yellow pine of 12 to 14 inches in thickness. Double planked with Georgia pine. Planking to water-line of oak 5 to 6 inches thick. Deck beams strengthened underneath and sides of braces similar to those in the bottom of the ship. Bottom 3 feet thick, gradually decreasing up to main deck where sides 20 inches thick. Height of decks: main 8 feet, 6 inches; berth 7 feet; cargo 7 feet; orlop 5 feet. *Alta*, 21 October 1869.

Burning of the Pacific Mail Steam Ship Company's Steam-Ship 'America,' In the Harbor of Yokohama, August 24th. 1872. San Francisco Investigation: to which is added the agents' letter to the president of the company, report of the investigation at Yokohama, and newspaper report of same, from the 'Japan Herald Mail Summary.' (San Francisco, 1872). Hereafter cited as *Burning of America*.

China. Had double outside planking from keel to wale height. Webb, *Certificates*, II, 133-133a. *Alta*, 25 July 1867.

Japan. Built of live and white oak, cedar and hackmatack. *New York Herald*, 18 September 1867.

of the engine, water for which was provided by a surface condenser.¹⁴

One reason for the size of these monsters was the great bunker capacity which they required. They were designed to carry 1,500 tons of coal, but this was insufficient to take them from San Francisco to Hongkong with a margin of safety, and they regularly coaled at Yokohama in both directions. When keeping their trans-Pacific schedules, the steamers burned an average of nearly forty-five tons of coal daily, although at lower speeds they were considerably more economical.¹⁵

If a steamer met bad weather for a large part of her voyage, there was danger that coal might run short before she reached port. *Great Republic* came into San Francisco in May 1868 with sixty-five tons of coal remaining, and on her next westbound passage she had but twenty tons, less

¹⁴ Piston rod 11 inches diameter. Connecting rod 10½ to 13 inches diameter and 22 feet, 4½ inches long. Crank pin 14 inches diameter. Main shafts in two pieces, each 36 feet long, 22 inches diameter. Weight of two shafts 67 tons. Weight of crank 8 tons. Weight of beam 25 tons. Weight of paddle-wheels 74 tons each. Circumference of wheels 120 feet. Air pump 6 feet long, 5 feet diameter. Four feed pumps 6 x 72 inches. Two bilge pumps 6 x 72 inches. Centrifugal circulating pump. Surface condenser with compressed wood packings for inner tube joints and supplied with water by an independent rotary pump driven by a pair of inverted, direct acting engines placed between the air pumps and the cranks. Feed pumps so arranged that each had its own suction pipe from tank and discharge pipe to boilers. Condenser 7 feet, 8½ inches height, 10 feet, 2 inches width, 13 feet length. 4,464 tubes ¾ inch diameter x 9 feet, 4 inches length. Four rectangular tubular marine boilers arranged fore and aft in the ship. Twenty-five feet length x 12 feet, 6 inches height x 13 feet width over shell. Each boiler had six furnaces 7 feet length x 3 feet, 3 inches diameter. Twenty-four boxes of tubes, each with 97 tubes of 7 feet length x 3 inches diameter. Diameter of main steam pipe 28 inches. Piston fitted with balanced poppet valves and Allan's adjustable cut off. Wheel overshot to prevent crank catching in the center, or to make it easier to throw it over if it should do so. Grate surface 560 square feet. Combined heating surface 15,200 square feet. Weight of machinery and boilers 880 tons. *Harper's Weekly* (24 November 1866), p. 742. *New York Herald*, 18 September 1867. *Alta*, 30 May 1868, 21 October 1869. Webb, *Certificates*, II, 133-133a. Francis B. C. Bradlee, *Notes*, Ms., Peabody Museum, Salem, Massachusetts.

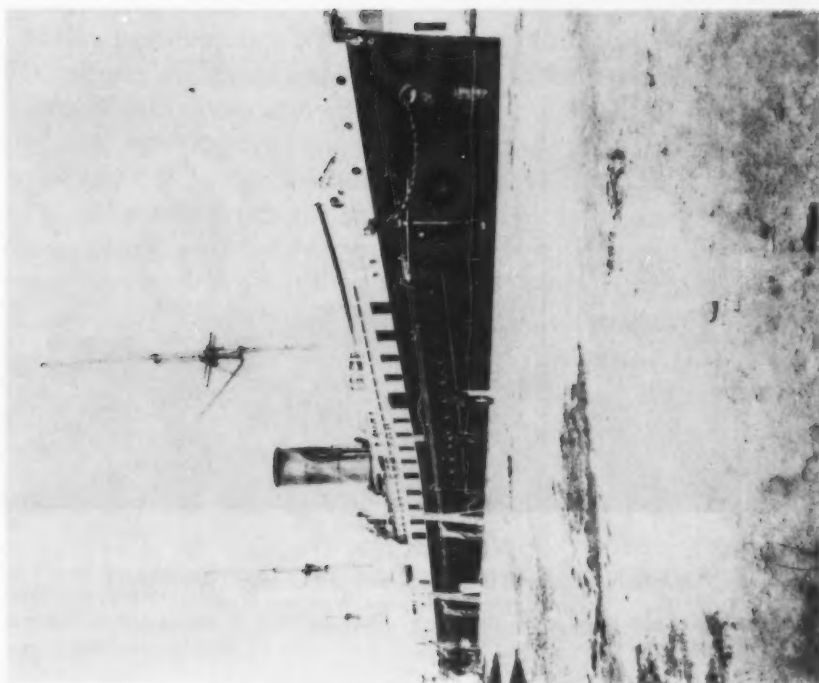
¹⁵ *Great Republic* burned 3,153½ tons of coal on one round voyage from San Francisco to Hongkong. Her average was 44.91 tons per day. Steam pressure was carried at 18 to 20 pounds, and she generally averaged between 55 and 65 revolutions of her wheels per mile, although her daily averages fluctuated from 50⅓ to 75¾. [J. M. Cavarley, *Log, Great Republic, personal copy, 3 September 1867-19 November 1867*], photostat of Ms., Bancroft Library, *passim*. Hereafter cited as *Log, Great Republic*.

On her first round voyage across the Pacific, *America* averaged about 44½ tons of coal per day. She sailed from Hongkong with 1,169 tons aboard, took on more at Yokohama; returning she carried 1,307 tons when she sailed from San Francisco, received 324 tons at Yokohama, and had 200 tons on hand when she arrived at Hongkong.

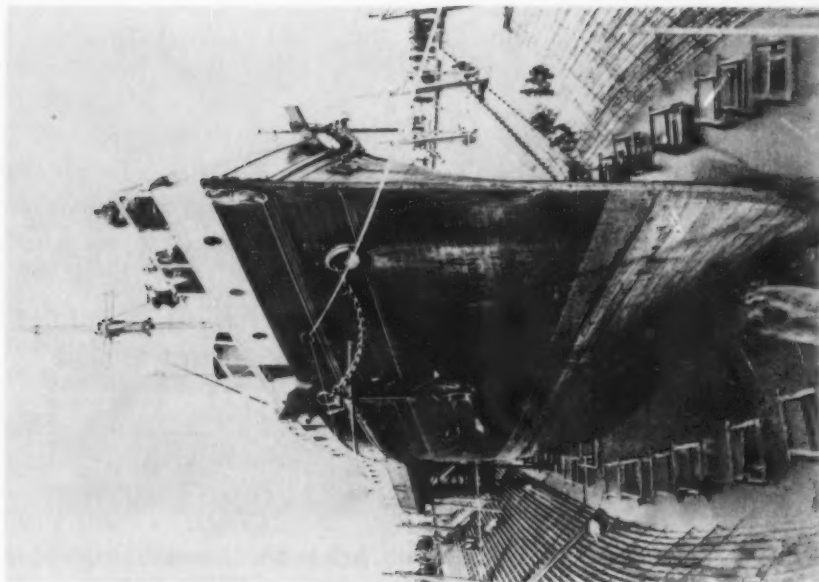
On the passage out from New York to Hongkong, *America* steamed at her most economical speed, made great use of sails, and burned 1,936 tons of coal. On one day she burned as little as 23 tons, and her averages for the voyage were: 23 345/2240 tons New York-St. Simon's Bay, 23 880/2240 St. Simon's Bay-Singapore, 25 1120/2240 Singapore-Hongkong. She made this voyage without refuelling, having had 2,160 18/2240 tons aboard when she sailed from New York, stored in her lower holds as well as the bunkers. A comparative statement on economical steaming for the first 14 days out of New York showed *America* to be a comparatively economical ship.

<i>Great Republic</i>	2,505 miles	491 tons coal
<i>Montana</i>	2,468 miles	422 tons coal
<i>America</i>	2,520 miles	366 tons coal

Like *Great Republic*, *America* generally carried 20 pounds of steam, and not less than 18 on the trans-Pacific run, although when coming out from New York, she sometimes carried only 17. *America, Journal*, 27 May, 10 June, 6, 20 July, 5, 22, 18, 28 September, 20 October, 4 November, 9, 18 December 1869 and *passim*. See also Webb, *Certificates*, II, 133-133a. *Panama Star and Herald*, 29 June 1867.

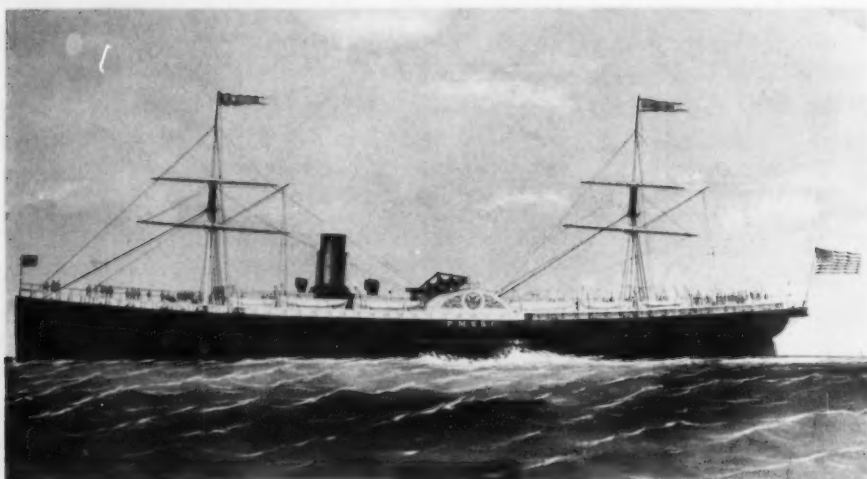


*China, 1866-1867, in dry dock at Hunter's Point,
San Francisco in 1877*



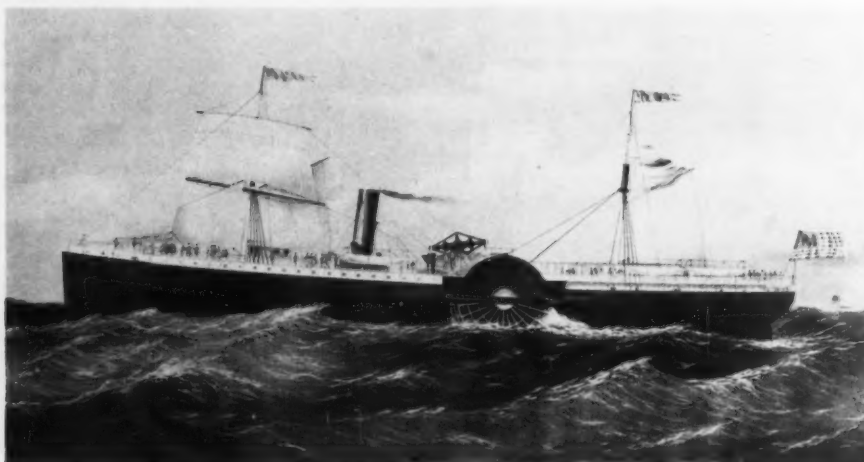
*China, 1866-1867, in dry dock at Hunter's Point,
San Francisco*

Reproduced from photographs owned by Edward Strong Clark



Colorado, 1863-1864, as originally built, before the changes in rig and hull which preceded her entry into the trans-Pacific service

Reproduced from a lithograph in the M. H. de Young Memorial Museum, San Francisco



New York, 1864-1865

*Reproduced from a lithograph in the Eldredge Collection of
The Mariners' Museum, Newport News*

than enough for half a day's steaming, when she anchored at Yokohama.¹⁶

Like other steamers of their day, the Pacific Mail paddlers were well provided with sails so that if they ran out of fuel or suffered engine trouble they would not be helpless. When they went into service, they were three-masted, bark-rigged vessels. On her voyage from New York to Hongkong, *America* carried courses, topsails and topgallants, as well as fore-and-aft sails. She made extensive use of these, but upon reaching Hongkong, her topsail and lower yards were sent down, the topmasts were housed, and she used only fore-and-aft sails on the trans-Pacific run.¹⁷ The heavy spars and a full suit of canvas were kept aboard, however, and if a ship encountered trouble these could quickly be put to use. Thus when *Great Republic* broke her starboard paddle shaft in mid-Pacific, all sail was set and she continued to Yokohama with only small help from her engine.¹⁸

The building of large, wooden side-wheelers in the late sixties was the cause of considerable criticism of the Pacific Mail. Such important contemporary lines as the Cunard had built its last paddler in 1862, and the Royal Mail Steam Packet Co.'s last vessel of that type was built in 1865. Even the conservative Peninsular and Oriental Steam Navigation Co. was building screw steamers with iron hulls.¹⁹ The reason for the Pacific Mail's perseverance with wooden paddle steamers was partly because the industrial development of the United States was behind that of Great Britain, and American shipbuilders and machine shops were not equipped to construct more modern ships and engines. President Allan McLane of the Pacific Mail maintained that the company was perfectly satisfied with its wooden hulls and beam engines. He argued that their great cargo capacity and comparatively inexpensive construction made them more economical than would be iron, screw steamers built in the United States. For years the beam engines of Pacific Mail ships had come from the Novelty Iron Works of New York, where a satisfactory standardized design had been evolved so that bids from other firms were not even requested when new engines were to be built. The owners of the Novelty Iron Works were large stockholders in the Pacific Mail, which was another, and perhaps the deciding factor, in favor of the beam engines.²⁰

¹⁶ Log, *Great Republic*, *passim*. *San Francisco Steamer Alta California*, 18 February 1868. Hereafter cited as *Steamer Alta*.

¹⁷ *America*, *Journal*, 29, 30, 31 May, 10 June, 17, 18 July, 23 August 1869 and *passim*.

¹⁸ *Steamer Alta*, 30 May 1868.

¹⁹ See footnote 7.

²⁰ The Pacific Steam Navigation Co. steamer *Limena*, 1865, iron, paddle, 1,622 tons gross, 267.2 x 40.2 x 17.6 feet averaged 20.6 tons of coal per day in contrast to the much larger Pacific Mail steamers which burned 32 to 45 tons per day on the trans-Pacific run. *Engineering* (8 March 1867).

Passenger accommodations on the four new vessels were located on the main and berth decks, as well as on the spar deck above the main deck. *Great Republic* was designed with quarters for 250 cabin and 1,200 steerage passengers.²¹ On the spar deck, the pilot house was placed immediately abaft the foremast, and joined to it was a deck cabin which ran nearly to the walking beam and contained quarters for the captain and deck officers as well as a smoking room for passengers. At the foot of the mainmast aft of the beam was another deck cabin. According to one traveller, the masts, cabins, tarpaulins, benches and deck were all painted white, and the deck from poop to prow was 'in one piece, and makes a famous walk.'²²

On the main deck, the portion abaft the wheel was devoted to cabin passengers. Here the dining saloon and social hall extended 120 feet down the center of the ship, with twenty-six double state-rooms and two bridal rooms opening out of them. The woodwork and furniture were of black walnut, and the walls of the public rooms and bridal rooms were frescoed; peach blossom, lavender, pea-green, and purple being the chief colors used, with ornamental work in gold. Upholstery on the furniture was of silk and worsted reps. On the floors, carpets and oilcloth were absent, the public rooms being floored with stripes of spruce and black walnut in 'Zebra pattern.' The state-rooms were described as being nearly as large and comfortable as rooms in a good hotel ashore. Their dimensions were 8 by 10 feet, and each had two doors, one opening into the saloon and the other onto the deck outside. In addition they had windows two feet square opening on deck.²³ Contemporaries spoke of their cabins being furnished like drawing rooms ashore, and as being surpassed only by Hudson River and Long Island Sound steamers.²⁴ One visitor, having written that 'any description fails to give an adequate idea of the immense proportions and superb finish of this noble vessel [*Great Re-*

p. 225. Pacific Mail Steamship Co., *Report of the president to the stockholders*. February, 1868 [(New York, 1868)], pp. 36-38, 45-47. Hereafter cited as *Pacific Mail, Report, 1868*. Pacific Mail Steamship Co., *Bill of complaint, affidavits, &c., and opinion of Mr. Justice Blatchford, in the suit of Brown, Hargreaves, et al., vs. Atlantic Mail Steamship Company, et al.* [(New York, 1867)], pp. 26, 29-30.

²¹ *Panama Star and Herald*, 29 June, 31 August 1867.

²² Joseph Alexander, graf von Hübner, *A ramble round the world, 1871* (New York, 1874), p. 189. Hereafter cited as *Hübner, Ramble*. *Alta*, 21 October 1869. *Steamer Alta*, 10 August 1867.

²³ *Alta*, 21 October 1869. *Burning of America, passim*. J. F. Campbell, *My circular notes. Extracts from journals, letters sent home, geological and other notes, written while travelling westwards round the world, from July 6, 1874, to July 6, 1875* (London, 1876), p. 150. Hereafter cited as *Campbell, Notes*. *A sketch of the route to California, China and Japan, via the Isthmus of Panama. A useful and amusing book to every traveler* (San Francisco and New York, 1867), p. 92. Hereafter cited as *Sketch of route*.

²⁴ *Steamer Alta*, 19 October 1867. Olive Risley Seward (ed.), *William H. Seward's travels around the world* (New York, 1873), p. 31. Hereafter cited as *Seward, Travels*.

public],’ went on to say that she seemed too richly and luxuriously fitted for the trans-Pacific trade.²⁵

On the main deck forward of the saloons and cabin state-rooms were the offices of purser and surgeon, the post office, galley, officers’ mess, engine room, bath room, pantry, store room, barber shop, cow and ice houses, water closets and armory. The bathing arrangements in *Great Republic* were described thus by a trans-Pacific traveller:

[There] is a bath that is in the paddle-box with a window a yard square. It is filled with fresh Pacific water, and I roll therein like the sea-lions of the Cliff-house while I watch the birds. Now and then a whale blows. None of them can enjoy the air and water more than I do in the early morning. . . . Every morning the English crowd bathes in the paddle-box establishment; an occasional Dutchman takes a plunge now and again, but we are regular bathers.²⁶

Also forward on the main deck were quarters for the steerage passengers. They slept in standee berths, which could easily be cleared away to give space for eating.

On the berth deck, just below the main deck, the far after portion was reserved for cabin passengers as above. Here also, state-rooms opened into a central saloon, connected by a companionway with the other cabin quarters. These state-rooms were well furnished, lighted and ventilated, although less expensive than the main deck cabins. The remainder of the berth deck was given over to the steerage. Along the sides aft of the wheels were about one hundred state-rooms without doors containing three to six berths and intended for women and families. In the space between the state-rooms and forward were more standee berths. This area was partially lighted by glass deadlights in the deck above. Baths and wash rooms were provided for the steerage, giving them accommodations not much inferior to first cabin on the pioneer steamers from Panamá to California.²⁷

The arms room, forward on the main deck, was stocked with 50 Enfield rifles, 25 revolvers, 25 cutlasses and 12 boarding pikes. In addition the steamers carried five 20-pound rifled cannon and two 30-pound Parrott guns. There were also arrangements for turning steam or hot water into any part of the ship.²⁸ This armament was not merely a routine measure, for there was real fear of attack by Chinese pirates, particularly

²⁵ *Steamer Alta*, 10 August 1867.

²⁶ Campbell, *Notes*, pp. 153, 155.

²⁷ *Alta*, 21 October 1869. *Burning of America*, *passim*.

²⁸ *Alta*, 21 October 1869. *Panama Star and Herald*, 29 June 1867.

should one of the ships be disabled or stranded off the China coast, and a rising among the steerage passengers was also regarded as a possibility.²⁹

There were elaborate precautions for safety aboard the Pacific Mail steamers. On the spar deck, the ships carried 12 metal life-boats, each having a capacity of between 100 and 120 persons. In addition there was the captain's gig and an India rubber life raft, which was inflated with bellows, and which could carry about a hundred. Each boat was equipped with masts and sails as well as oars, and carried chart, compass, life preservers and sufficient water and provisions for 12 days. The steamers were also provided with enough life preservers for all passengers, *America* having 1,399. A large cast iron pipe ran the length of the main deck, from which 32 nozzle connections led off, and the ships had 750 feet of fire hose, in addition to 500 feet of deck hose. Pumps for the fire mains were operated from the main engine when the ship was under way, or by the donkey engine in port. Fire buckets were provided on the spar deck around the funnel, and on the berth deck near the engine.³⁰

The trans-Pacific steamers were designed to carry between 2,000 and 2,800 tons of cargo.³¹ This was stowed in the hold, below the orlop deck, as well as on the orlop and cargo decks. Coal bunkers were located amidships on the orlop deck on either side of the engines.³² The cargo was generally worked in and out through side ports, although the steam driven capstan was sometimes used for heavy objects.³³

The building of the four China liners was an expensive matter. Each one of them cost just over a million dollars, while the usual coastwise steamers of the company represented outlays of only half to three-quarters of that amount.³⁴

Although the first of the new steamers were laid down early in 1866, they were not ready for service until well into the following year. The contract held by the Pacific Mail, however, called for service to begin on or before 1 January 1867. In order to carry out this requirement, a substitute steamer was provided for the pioneer voyage. The ship chosen for

²⁹ *Review of the report of the president of the Pacific Mail Steamship Co.* (New York, 1868), pp. 13-14. *Sketch of route*, pp. 99-100.

³⁰ *Burning of America*, pp. 6, 13, 14, 388 and *passim*. *Alta*, 21 October 1869. *Panama Star and Herald*, 29 June 1867. E. D. G. Prime, *Around the world: sketches of travel through many lands and over many seas* (New York, 1872), pp. 69-70. Hereafter cited as Prime, *Around the world*.

³¹ *Panama Star and Herald*, 29 June 1867. *Steamer Alta*, 19 October 1867.

³² *Burning of America*, p. 195.

³³ *Ibid.*, pp. 237, 294-295.

³⁴ *America*, \$1,017,942.22. *China*, \$1,006,282.42. *Great Republic*, \$1,058,234.72. *Japan*, \$1,049,434.72. *Alaska*, \$964,138.39. *Colorado*, \$750,000.00. *Costa Rica*, \$400,000.00. *New York*, \$500,000.00. [*Pacific Mail Steamship Co., Statement, May 1st, 1871* (New York, 1871).]

this place was *Colorado*, which had been built for the Pacific Mail's service between San Francisco and Panamá in 1863-1864 by William H. Webb. She had begun to operate on this line only in the summer of 1865, and was thus virtually a new ship. Her length of 340 feet, and tonnage of 3,728 made her quite comparable in size to the ships which were to follow.³⁵ When it was decided to place *Colorado* in the trans-Pacific service, extensive alterations were made aboard her at the Pacific Mail's San Francisco wharf. The outer line of state-rooms was removed from her main deck, and her guards, which had overhung the water from ten to twelve feet were cut down to between two and three feet, tapering from aft of the paddle boxes to the stern, thus leaving only enough room for the necessary chocks and belaying bits, and for access to them. Forward of the paddle boxes, the guards were similarly reduced, and short, heavy timber knees were placed all around the ship to strengthen the guards and deck frame. At the same time, a third mast was stepped, and the vessel was ship-rigged, carrying as high as top-gallant sails on her mizzen.³⁶

The first published notice of the new service appeared in the newspapers of 2 August 1866, when it was announced that *Colorado* would sail for China on the first day of the following year.³⁷ At the beginning of the next month, a more detailed advertisement appeared giving the ports of call as Honolulu, Kanagawa, and Hongkong, and announcing that passengers and freight would be taken for Shanghai, to be forwarded by connecting steamer from Yokohama.³⁸

As the day of sailing approached, interest in the new line grew in intensity. On 24 December, *Colorado* was coaled, taking 1,025 tons in twelve working hours, a record for the Pacific coast, and hauled around to her berth.³⁹ The night before sailing, at nine o'clock, a 'Grand China Mail Dinner' took place at the Occidental Hotel in San Francisco. In the flag-decked, evergreen-garlanded banquet room, fifty canary birds were found 'discoursing their twittering music to the rattling of knives, the tinkling of glasses, the pop of champagne, and the conversation and laughter of the guests.' At the head table, decorated by a model of *Colorado*

³⁵ *Colorado*. 3,357 22/95 tons (1865), 3,728 03/100 tons (1865), 340 x 45.6 x 22.6 feet. Vertical beam engine built by the Novelty Iron Works, diameter of cylinder 105 inches, length of stroke 12 feet. Keel laid 6 June 1863 in yard of William H. Webb, launched 21 May 1864. Sailed from New York for San Francisco via Rio de Janeiro, Callao and Panamá 1 April 1865. Sold by Pacific Mail 1878. Broken up at San Francisco 1879.

³⁶ *San Francisco Daily Evening Bulletin*, 18 October 1866.

³⁷ *Sacramento Daily Union*, 2 August 1866.

³⁸ *Ibid.*, 3 September 1866.

³⁹ *Ibid.*, 26 December 1866.

in sugar, Governor Frederick Ferdinand Low of California presided over the eighteen toasts given by distinguished figures in realms of church, commerce and state. Among the speakers were three Chinese merchants, and of the 250 persons present there were in all a dozen Chinese. The remarks made dwelt upon the significance of the occasion, the possibilities of rich returns to the Pacific Mail and to the commerce of San Francisco in general.⁴⁰

Promptly at noon the next day, *Colorado's* bowline was let go, and her head swung out into the stream. At a wave of the hand of Captain George H. Bradbury, standing on the paddle box, the quarter line dropped into the water, and the great beam above the spar deck began to swing rhythmically as the paddle-wheels bit into the water of San Francisco Bay. A moment later the steamer fired three guns in signal of departure, which were answered by four from the wharf. As she steamed down the bay and out to sea, *Colorado* was saluted by the guns of all the ships at anchor. Crowds had come to the wharf to see her departure, and the hills and piers near her berth were covered with people two hours before sailing. Many more came to Fort Point and the Cliff House to watch the ship pass out into the Pacific.⁴¹ (Plate 6.)

After a passage of nearly twenty-two days, *Colorado* anchored at Yokohama at eleven o'clock on the morning of 24 January. Here she was enthusiastically received by the ships in the harbor, and was crowded with visitors both Oriental and European. After a twenty-four hour stay, she continued to Hongkong, arriving there at midnight of 30 January. She remained here more than a fortnight, not sailing on her eastbound voyage until 17 February. Two days before her departure, *Colorado* made an excursion around Hongkong Island with about 1,000 invited guests aboard. She sailed at 2.30 P.M., and 'trouble' began almost at once. 'A rush was made for the dining saloon, and the clatter of knives and forks, and the flying of champagne corks could be heard in every direction. There was just as much of everything as was wanted, and everything being free, they just went into the good things like old soldiers.' The band of the Twentieth Regiment was aboard, a quadrille was made up, and dancing went forward in spirited fashion until the ship returned to anchor about 6.30 P.M. *Colorado* made an excellent impression on the British in Hongkong, and sailed with a good passenger list and far more freight than had been expected.⁴² On the eastbound voyage, she remained two days at

⁴⁰ *Steamer Alta*, 10 January 1867.

⁴¹ *Idem*.

⁴² *Ibid.*, 30 March 1867.

Yokohama, and reached San Francisco on the morning of 20 March, just under twenty-two days from the coast of Japan.⁴³

Two more voyages were made by *Colorado* before the arrival of *Great Republic* in San Francisco.⁴⁴ The new ship sailed for China on 3 September 1867, followed on 14 October by *China*.⁴⁵ Service at six-weekly intervals was maintained by these two ships until the maiden voyage of *Japan* from San Francisco inaugurated monthly sailings on 3 August 1868.⁴⁶ A year later, with the coming of *America* to the Pacific, there was always an extra ship for the China line, and one of the four sometimes made a voyage to Panamá during a long layover in San Francisco.⁴⁷

The Pacific Mail's contract with the Post Office Department required calls at Honolulu between San Francisco and Japan, but from the beginning the stop at the Hawaiian Islands was omitted. In 1866, the company requested that it be freed from the necessity of the Honolulu call. It was argued that steamers of sufficient size and coal capacity for the trans-Pacific service, were too large to enter Honolulu harbor, which had a depth of barely twenty-one feet under the most favorable conditions. There were also important advantages to be gained in speed through following the 'great circle' course from San Francisco to Yokohama rather than making the long detour to Honolulu. In the light of these arguments, the Postmaster-General recommended in 1866 that the Pacific Mail be permitted to drop the Hawaiian call.⁴⁸ At the time of the opening of service, the San Francisco Chamber of Commerce also urged that the company receive permission to alter the route in the interest of greater speed.⁴⁹

In response to this pressure, the Post Office Appropriation Act of 18 February 1867 permitted the change. The Honolulu call was to be omit-

⁴³ Itinerary for Voyage 1, *Colorado*.

Sailed San Francisco 1 January 1867, noon.

Arrived Yokohama 24 January 1867, 11 A.M. (21 days, 23 hours).

Sailed Yokohama 25 January 1867, 11 A.M.

Arrived Hongkong 30 January 1867, midnight (5 days, 3 hours).

Sailed Hongkong 17 February 1867, 9 A.M.

Arrived Yokohama 25 February 1867, 11.40 A.M. (8 days, 2 hours, 40 minutes).

Sailed Yokohama 27 February 1867, 10.30 A.M.

Arrived San Francisco 20 March 1867, 9 A.M. (21 days, 22 hours, 30 minutes).

⁴⁴ *Colorado* sailed again on 3 April and 4 July 1867. She continued to make occasional trans-Pacific voyages as late as 1875. *Annual report of the Postmaster General of the United States for the fiscal year 1867* (Washington, 1867), p. 21. *Steamer Alta*, 18 September 1867, 22 August 1868 and *passim*.

⁴⁵ *Ibid.*, 30 November 1867, 11 January 1868.

⁴⁶ *Ibid.*, 6 August 1868.

⁴⁷ *Ibid.*, *passim*.

⁴⁸ *Annual report of the Postmaster General of the United States for the fiscal year 1866* (Washington, 1866), pp. 7-9.

⁴⁹ *Steamer Alta*, 10 January 1867.

ted, and in its place, the Pacific Mail was to establish regular steamship service between Yokohama and Shanghai.⁵⁰ In a supplemental contract, dated 20 March 1867, the Pacific Mail agreed to these new provisions, maintaining the branch line without further government subsidy with sailings scheduled to connect with the mail steamer from San Francisco.⁵¹

To carry out this new service, *Costa Rica*, a wooden side-wheeler of 1,950 tons was sent out from New York to Yokohama by way of the Cape of Good Hope.⁵² She was joined at Yokohama late in 1867 by *New York*, a somewhat larger vessel, which at first served principally as a spare steamer.⁵³ By 1869 both ships were in the Shanghai service, and had been joined by *Oregonian*. Two years later, the branch line boasted four sailings monthly, with *Ariel* and *Golden Age* in addition to the other three. 1871 found *Ariel* on a monthly service from Yokohama to Hakodate and the other steamers still operating to Shanghai. The Hakodate service was withdrawn in 1874, *Ariel* having been lost the year previous. In 1875, at the time of the sale of this local line to the Japanese Mitsubishi Mail Steamship Co., *Costa Rica*, *Golden Age*, *Nevada* and *Oregonian* were running between Yokohama and Shanghai with intermediate calls at Hiogo (modern Kobe) and Nagasaki.⁵⁴

⁵⁰ 14 U. S. Stat. at L. (1868), 394.

⁵¹ Annual report of the Postmaster General of the United States for the fiscal year 1867 (Washington, 1867), pp. 21-22.

⁵² *Costa Rica*. Wooden, side-wheel steamer. 1,950 11/95 tons (1864), 269 feet x 38 feet, 10 inches x 27 feet. Vertical beam engine. Built by Jeremiah Simonson, Brooklyn, for Cornelius Vanderbilt as *Commodore* in 1863-1864. Operated as *Costa Rica* for Vanderbilt from New York to Aspinwall from July 1864 until the summer of 1865 when she was purchased by the Pacific Mail. Originally advertised to sail from New York for Hongkong, Shanghai and Yokohama via Cape of Good Hope on 10 October 1866. Sailed 1 April 1867. Arrived Yokohama 20 July 1867. Sold to Mitsubishi Mail S. S. Co. in 1875 and renamed *Genaki Maru*. Surveyed at Shanghai as late as 1877. *New York Herald*, 7, 11 October 1866, 2 April 1867. *Steamer Alta*, 18 September 1867.

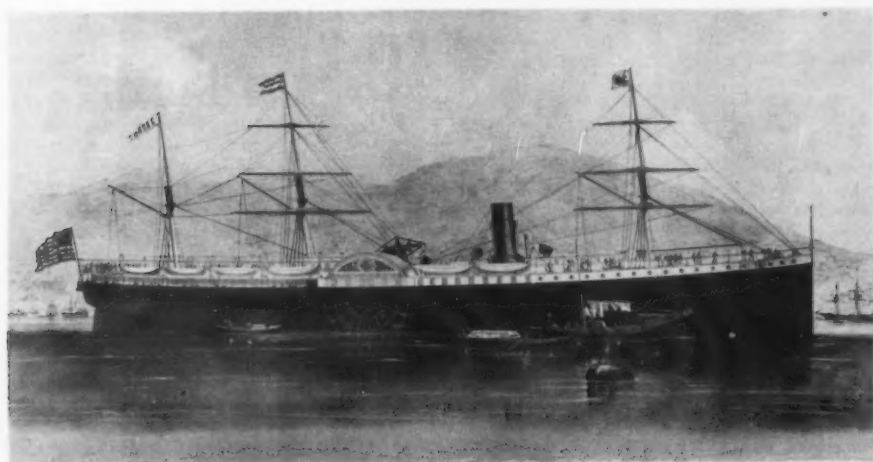
⁵³ *New York*. Wooden, side-wheel steamer. 2,217 43/100 tons (1865), 292.6 x 41.7 x 26.5 feet. Vertical beam engine built by Allaire Iron Works, diameter of cylinder 90 inches, length of stroke 12 feet, diameter of paddle-wheels 35 feet, 1,800 horsepower. Built by Jeremiah Simonson, Brooklyn, for Cornelius Vanderbilt. Launched 16 June 1864. Operated by Vanderbilt for two voyages between New York and Aspinwall beginning in September 1865. Sold to Pacific Mail, and continued in this service for her new owners until April, 1867. Sailed from New York 3 August 1867 and arrived at Hongkong 16 October having called at St. Vincent's, Capetown, Port Louis, Mauritius and Singapore (sixty-two steaming days). Arrived Yokohama 3 November 1867. Made one round voyage across the Pacific in 1868 in place of *Great Republic* when latter vessel had broken her shaft. Sold to Mitsubishi Mail S. S. Co. in 1875 and renamed *Tokio Maru*. Surveyed at Shanghai as late as 1878. *New York Herald*, 3 August, 4 November 1867. *Steamer Alta*, 11 January, 22 May, 6 July, 22 August, 22 September 1868. (Plate 4).

⁵⁴ Henry G. Langley, *Langley's San Francisco business directory and metropolitan guide* (San Francisco 1869), p. v; (1871), p. lxxxix; (1872), p. vi; (1873), p. vi; (1874), p. iv; (1875), p. iv.

Oregonian. Wooden, side-wheel steamer. 1,914 45/100 tons (1866), 275.5 x 42.4 x 21.3 feet. Vertical beam engine built by the Allaire Iron Works, diameter of cylinder 82 inches, length of stroke 12 feet, diameter of paddle-wheels 35 feet. Built by Lawrence and Foulkes, Williamsburg, New York, for Daniel F. Bradford, J. W. Ladd, W. S. Ladd and A. E. Tilton for service between San Francisco and Portland, Oregon. Arrived at San Francisco 2 or 3 December 1866, sixty-eight days from New York direct. Did not enter the Oregon trade, but was sold to the North American S. S. Co. 22 June 1867, and operated between San Francisco and Panamá from November 1867 until November 1868.

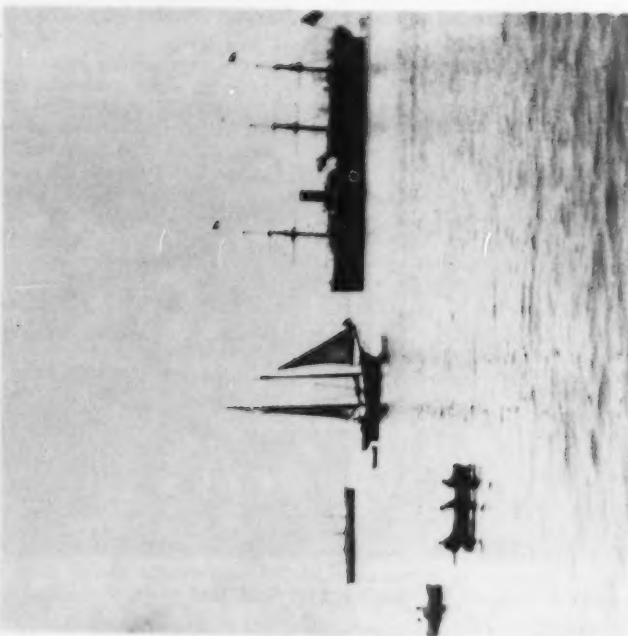


*Japan, 1867-1868, alongside the Pacific Mail Steamship Co.'s
coal wharf in San Francisco*



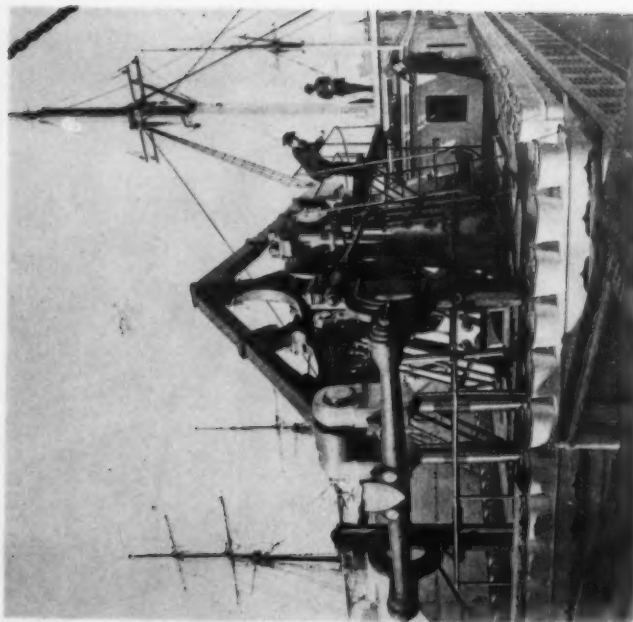
Japan, 1867-1868

*Reproduced from a lithograph in the Eldredge Collection of
The Mariners' Museum, Newport News*



*Colorado, 1863-1864, sailing from San Francisco
on her first voyage to Yokohama and Hongkong,
1 January 1867*

*Reproduced from a photograph owned by
Edward Strong Clark*



*America, 1868-1869, walking beam
Reproduced from a photograph owned by
Elwin M. Eldredge*

During the first months of operation across the Pacific, there were other plans afoot to change the original arrangements. In April 1867, the Pacific Mail applied to the Postmaster-General for permission to terminate the voyages of the trans-Pacific steamers at Yokohama, maintaining the line to Hongkong by smaller ships. In fact, it was for this purpose that *New York* was sent to the Far East. It was also proposed to change the Japanese port of call from Yokohama to Osaka. Permission was granted for these alterations, but it was never used. The president of the Pacific Mail, Allan McLane, who went on a tour of inspection of the line on the maiden voyage of *Great Republic*, vetoed the proposal of a Hongkong branch, recognizing that the principal dependence of the trans-Pacific line was on the trade of China, and therefore that the large ships should make the entire voyage.⁵⁵

By 1869 there was extensive agitation in commercial circles for more frequent trans-Pacific service, agitation which was undoubtedly in part the work of the Pacific Mail Steamship Co. itself. Chambers of Commerce in New York and San Francisco urged the change, and the Postmaster-

Sold to the Pacific Mail and sailed from San Francisco 4 August 1869, making one voyage in the trans-Pacific mail line. Arrived Hongkong 5 September 1869. Entered the Yokohama-Shanghai service. Sold to Mitsubishi Mail S. S. Co. in 1875. *America, Journal*, 5, 7 September 1869. *San Francisco Daily Evening Bulletin*, 3 December 1866, 24 June 1867. *San Francisco Weekly Alta California*, 7 August 1869, 17 August 1872. Hereafter cited as *Weekly Alta*.

Golden Age. Wooden, side-wheel steamer. 2,181 74/95 tons (1853), 1,869 56/100 tons (1865), 272 feet, 10 inches x 41 feet, 10 inches x 25 feet, 1 inch. Vertical beam engine, built by the Morgan Iron Works, diameter of cylinder 83 inches, length of stroke 12 feet. Built by William H. Brown, New York, in 1853 for J. Howard and Son and intended for service between Australia and Panamá. Sailed from New York in 1853, and went via Liverpool, St. Vincent's, Capetown, King George's Sound and Melbourne to Sydney. Sailed from Sydney 12 May 1854 and arrived Panamá via Tahiti 17 June. Sold to Pacific Mail in August 1854. Operated between San Francisco and Panamá from October 1854 through 1869. Transferred to Yokohama-Shanghai branch line 1871. Sold to Mitsubishi Mail S. S. Co., 1875, and renamed *Hiroshima Maru*. Remained in service as late as 1882.

Ariel. Wooden, side-wheel steamer. 1,295 28/95 tons (1855), 1,736 39/100 (1865), 252 x 32.6 x 20.8 feet. Vertical beam engine built by the Allaire Iron Works, diameter of cylinder 75 inches, length of stroke 12 feet, diameter of paddle-wheels 33 feet. Built by Jeremiah Simonson, Brooklyn. On the stocks as early as the first half of 1854; launched 3 March 1855. Intended for service between New York and Aspinwall for Cornelius Vanderbilt. Made one voyage to Aspinwall in 1855, and then operated from New York to Southampton and Havre for Vanderbilt 1855-1859. Between 1859 and 1865, *Ariel* sailed between New York and Aspinwall when not under charter to the War Department. Purchased by Pacific Mail in 1865. Sent to the Far East in 1871, and was lost between Yokohama and Hakodate 27 October 1873.

Nevada. Wooden, side-wheel steamer. 2,143 82/100 tons, 281 x 40 x 16.3 feet. Vertical beam engine. Built by Jeremiah Simonson, Brooklyn, 1865-1867. Originally named *Paou Shan*; name changed to *Nevada* 9 November 1866. Owned by William H. Webb. Operated from New York to San Juan de Nicaragua for three voyages in 1867. Sailed from New York for San Francisco 28 September 1867, arriving 15 December via Lota and Panamá. Operated between San Francisco and Panamá for the North American S. S. Co. from December 1867 until October 1868, and served on Webb's San Francisco-Australia line 1871-1873. Purchased by the Pacific Mail, and placed on the Yokohama-Shanghai branch. Sold to the Mitsubishi Mail S. S. Co., 1875.

⁵⁵ *Annual report of the Postmaster General of the United States for the fiscal year 1867* (Washington, 1867), pp. 21-23. *Annual report of the Postmaster General of the United States for the fiscal year 1868* (Washington, 1868), pp. 19-21. *Pacific Mail, Report, 1868*, p. 21. *Steamer Alta*, 19 August 1867.

General recommended to Congress that provision be made for bi-monthly sailings to China.⁵⁶ In the Post Office Appropriation Act of 1 June 1872, Congress authorized a new contract for an additional monthly mail service from San Francisco to Hongkong to be subsidized at a rate of not more than \$500,000 a year. The new service was to begin 1 October 1873, and to be carried out by iron, screw steamers, officered by American citizens and fitted for possible naval service.⁵⁷ As had been expected, the only bidder for the service was the Pacific Mail and the new contract went to that company, with provision for a total payment of \$1,000,000 annually for bi-monthly departures.⁵⁸ Although the new contract did not go into effect until October 1873, the Pacific Mail began more frequent sailings in May 1872. In the following years, the required iron hulled vessels were slow in making their appearances, and the Pacific Mail was also the target for charges of illegal lobbying in connection with the new contract. As a result of the latter complaint, the contract was repealed on 3 March 1875, reducing the company to its \$500,000 subsidy once more.⁵⁹ Beginning in July of that year, the Pacific Mail curtailed its sailings to monthly frequency, partly because of the action of Congress, and partly due to its working agreement with the new Occidental and Oriental Steamship Co., which began trans-Pacific service on 15 July 1875, and whose steamers thereafter sailed alternately with those of the Pacific Mail.⁶⁰

Two other wooden side-wheelers served on the trans-Pacific line before that type of vessel was replaced. In 1871, *Arizona* made one voyage to the Orient, and in the same year, *Alaska*, a 4,000-ton steamer, quite comparable to the ships built particularly for the service, appeared as a regular member of the China fleet.⁶¹ With the increased sailings begin-

⁵⁶ *Alta*, 9 November 1869. *Annual report of the Postmaster General of the United States for the fiscal year 1870* (Washington, 1870), p. 18. *Annual report of the Postmaster General of the United States for the fiscal year 1871* (Washington, 1871), p. 18.

⁵⁷ 17 Stat. at L. (1873), 201-202.

⁵⁸ *Annual report of the Postmaster General of the United States for the fiscal year 1872* (Washington, 1872), pp. 17, 196-202.

⁵⁹ 18 Stat. at L. (1875), p. 342.

⁶⁰ *Weekly Alta*, *passim*. John Haskell Kemble, 'The big four at sea: the history of the Occidental and Oriental Steamship Company,' *Huntington Library Quarterly*, III (1940), 339-357.

⁶¹ *Arizona*. Wooden, side-wheel steamer. 2,793 44/100 tons, 323.8 x 44.8 x 41 feet. Vertical beam engine built by the Novelty Iron Works. Diameter of cylinder 105 inches, length of stroke 12 feet, diameter of paddle-wheels 46 feet. Built by Henry Steers, Greenpoint, Long Island, and launched 14 January 1865. Operated between New York and Aspinwall for the Pacific Mail beginning 1 March 1866, and through June 1869. She later operated in coastwise service between San Francisco and Panamá, and was laid up in 1876. Sold to Japanese owners. Still listed in Lloyds in 1882.

Alaska. Wooden, side-wheel steamer. 4,011 64/100 tons, 346 x 47.6 x 23.5 feet. Vertical beam engine built by the Novelty Iron Works, diameter of cylinder 105 inches, length of stroke 12 feet. Built by Henry Steers, Greenpoint, Long Island, for the Pacific Mail. Launched March 1868. Operated for the Pacific Mail between New York and Aspinwall beginning 8 August 1868 until after

ning in 1872, *Alaska*, *America*, *China*, *Colorado*, *Great Republic* and *Japan* were all employed on trans-Pacific voyages. In the following year, the first iron, screw steamers entered the trade, the chartered British vessels *MacGregor* and *Quong Se*. More British screw steamers, *Granada*, *Vancouver* and *Vasco da Gama* were chartered in 1874, and the Pacific Mail's own iron steamer *Colima* made a voyage to the Far East in the same year. 1875 saw the advent of *City of Peking* and *City of Tokio*, large, iron, screw steamers built particularly for the service, and from that year onward the wooden paddlers played an increasingly smaller part in the China line. In 1879, *Alaska* and *China* made one voyage each, the last of the side-wheelers across the Pacific.⁶²

The manner in which those steamers pounded back and forth over the lonely stretches of the North Pacific was an everlasting wonder to the men of their time. With the omission of the Honolulu call, a non-stop voyage from San Francisco to Yokohama was required. It was the original intention of the Pacific Mail's managers to send the steamers by the shortest direct route from the United States to Japan, that is, by way of the 'great circle' course. On the first voyage of *Colorado* this was attempted, but without success. For her first two days out of San Francisco, she headed northwest, but meeting heavy westerly gales which greatly increased coal consumption as well as reducing speed, Captain Bradbury altered his course and followed the thirtieth parallel, directly westward to Yokohama. On the return voyage, the 'great circle' was again attempted, but after ten days of heavy gales, the course was abandoned and the moderate winds and pleasant weather of a more southerly route were sought.⁶³ The lesson thus learned was followed in the ensuing years by the side-wheelers. They kept between the thirtieth and thirty-fifth parallels, thus sailing directly west and east. This made the distance between San Francisco and Yokohama over 3,000 miles, or more than 250 miles longer than the 'great circle' route, but better weather conditions compensated for the distance.⁶⁴

The Pacific Mail schedule called for a 22 day passage between San Francisco and Yokohama, but the steamers actually averaged more than that time. For the voyages on which figures are available the time

June 1869. Engaged in trans-Pacific service 1871-1879. Rebuilt as a hulk in the latter year, and served as a store ship at Acapulco as late as 1885.

⁶² *Alta*, *passim*.

⁶³ *Steamer Alta*, 30 March 1867.

⁶⁴ Charles Carleton Coffin, *Our new way round the world* (London, 1883), p. 467. Hereafter cited as Coffin, *New way*. William Simpson, *Meeting the sun; a journey all round the world . . .* (London, 1874), p. 338. Hereafter cited as Simpson, *Meeting the sun*. *Log, Great Republic, America, Journal*, *passim*.

works out at 23 days 19 hours westbound, and 22 days 20 hours eastbound.⁶⁵ From San Francisco through to Hongkong the average time was 32 days 10 hours, including detention at Yokohama, and 34 days in the opposite direction.⁶⁶ Company regulations limited the steamers to a sea speed of 9.5 knots, although the steamers were capable of better time and could have made the San Francisco-Yokohama passage in 18 days. As it was, shorter passages were strictly forbidden, a captain being liable to dismissal if he brought his ship into port ahead of schedule, and if a steamer reached the coast early she cruised up and down until the specified time had elapsed before entering port.⁶⁷ There was bitter complaint at this requirement, but there were sound reasons behind it. The first of these was coal economy, but in addition the slower speed gave some margin for delay and made possible closer adherence to the published schedule. Captains were discouraged from competing for speed records, and the Post Office Department was not moved to require more frequent service as it might have been had there been consistently shorter passages.⁶⁸ Thus, although *Colorado* held the speed laurels for the trans-Pacific paddlers, it was not until the coming of the iron, screw steamers that the schedule was accelerated.⁶⁹

⁶⁵ Figures were available for only thirteen westbound voyages, as against eighty-three eastbound, so that the westbound averages are less likely to be accurate. The averages by steamers on the San Francisco-Yokohama passage are as follows:

Ship	Westbound time	No. of voy.	Eastbound time	No. of voy.
<i>Alaska</i>			25 days, 3 hours	12
<i>America</i>	25 days, 13 hours	2	22 days, 4 hours	8
<i>China</i>	23 days, 10 hours	4	23 days, 1 hour	19
<i>Colorado</i>	22 days, 23 hours	3	21 days, 22 hours	9
<i>Great Republic</i>	24 days, 0 hours	2	22 days, 17 hours	16
<i>Japan</i>	27 days, 0 hours	2	22 days, 13 hours	18
<i>New York</i>	21 days, 0 hours	1	20 days, 0 hours	1

Alta, *Steamer Alta*, *Weekly Alta*, *Log*, *Great Republic*, *America*, *Journal*, *passim*.

⁶⁶ These averages are based on eleven westbound and eighty eastbound passages. The time includes detention at Yokohama, which was likely to be longer eastbound than westbound, thus accounting for the apparent inconsistency between total times and Yokohama-San Francisco times.

Ship	Westbound time	No. of voy.	Eastbound time	No. of voy.
<i>Alaska</i>			34 days, 20 hours	8
<i>America</i>	34 days, 12 hours	2	33 days, 19 hours	8
<i>China</i>	33 days, 7 hours	4	36 days, 0 hours	22
<i>Colorado</i>	31 days, 12 hours	3	31 days, 8 hours	8
<i>Great Republic</i>	33 days, 21 hours	2	33 days, 18 hours	15
<i>Japan</i>	37 days, 0 hours	1	33 days, 6 hours	18
<i>New York</i>			29 days, 0 hours	1
<i>Oregonian</i>	31 days, 0 hours			

Sources same as for note 65.

⁶⁷ Hübner, *Ramble*, p. 202.

⁶⁸ *Ibid.*, pp. 202-203. Coffin, *New way*, pp. 466-467. Prime, *Around the world*, p. 69.

⁶⁹ For *Colorado*'s speed see notes 65 and 66. By 1878, *City of Peking* was making the passage from Hongkong to San Francisco in 26 days, and from Yokohama to San Francisco in 16 days, 13 hours. *Alta*, 2 January 1879.

All sorts of weather from glassy seas and light airs to hurricanes and typhoons were encountered on the China voyage. The broad beamed paddle steamers were comfortable ships, and had good sea-keeping qualities. On the eastbound voyage of *Colorado* in February and March 1867, she had to heave to in a hurricane, but was reported as 'behaving like a duck.' The guards were started in some places, and the main deck was wet with spray, but no water was taken below.⁷⁰ When *Great Republic* was returning from Yokohama to San Francisco on her first voyage, she encountered a severe gale. Its effects may be gathered by random quotations from her log for the passage.

Shipped heavy sea under port guards and knocked them all up. . . . Ship laboring heavily and shipping considerable water. . . . Ship so deep [with coal] that she does not rise to the sea well and labors heavily. . . . Heavy seas broke up under port guards aft and broke them away. . . . Ship pitching bows under and only able to make 7 turns [of paddle-wheel per minute]. . . . Ship laying to head to sea with just steerage way on . . . taking water clear over hurricane deck. . . . Number of very heavy seas struck under starboard guards and knocked them up and lifted upper deck. . . . Ship rolling so heavy that we were obliged to slow down for fear of carrying away the shafts. . . . Ship rolling guards under both sides. . . .⁷¹

There was an element of risk in the long trans-Pacific voyage without opportunity to replenish bunkers. The margin of coal carried beyond that absolutely required was not large, and unexpectedly heavy weather or an accident might exhaust the supply before port was reached. After *Colorado's* first voyage, Captain Bradbury recommended that an emergency coal station be established on Hermes Reef, two hundred miles south of the steamer course.⁷² By the end of 1867 a coal supply had been placed on Brooks's Island (later known as Midway), just west of Hermes Reef. There is no evidence that the steamers ever made use of this, although they sometimes passed within sight, *Great Republic* exchanging signals with the station there on 21 December 1867.⁷³ The investment of \$25,000 there was carried in the reports of the Pacific Mail until 1885.⁷⁴ In the winter of 1874-1875, *Colorado* was driven so far south by bad weather that Captain H. G. Morse called at Honolulu for coal, and in 1878 *Alaska* also put in there for repairs.⁷⁵

The center of Pacific Mail operations was at San Francisco, and there

⁷⁰ *Steamer Alta*, 30 March 1867.

⁷¹ Log, *Great Republic*, 28 October-6 November, 14, 15 November 1867.

⁷² *Steamer Alta*, 30 March 1867.

⁷³ Ibid., 18 February 1868. Coffin, *New way*, p. 468.

⁷⁴ Annual report, *Pacific Mail Steamship Company*, April 30th, 1885 [(New York, 1885), p. 3].

⁷⁵ *Alta*, 22 January 1875. [Pacific Mail Steamship Co., *Annual report*, 1878 (New York, 1878), p. 2.]

the company maintained a large organization. New wharves and warehouses covering an area of ten acres between Townsend, Japan and Brannan Streets were completed just as the China line was being established. Here were the company offices, the carpenter shop, coal yard and machine shop as well as docks and storage warehouses.⁷⁶

The arrival of one of the steamers from the Orient was an event of city-wide importance, and contemporary travellers often described it. Thus on 19 June 1869, news was telegraphed from the lookout on the Heads at the entrance of San Francisco Bay that *Great Republic* was coming in from the west. Small white flags marked 'U. S. M.' were broken out on the city street cars, indicating that a mail steamer was coming into the harbor, and a messenger from the Merchant's Exchange galloped through the streets with the news that the ship was *Great Republic* from China. Outside the gates of the Pacific Mail wharf, a crowd of persons and vehicles soon assembled, but only those bearing passes were allowed on the dock. These included mail and express wagons, hacks for passengers, and nearly a hundred Chinese merchants, consignees of the cargo or representatives of the 'Six Companies,' regional organizations of Chinese in San Francisco.

The 'Great Republic,' flying the flag of our country, that of the P. M. S. S. Co., and the yellow dragon of China, has meantime rounded Ricon Point, and is lying in the stream, off the southern end of the wharf, with hawsers out, vainly endeavoring, against the strong ebb tide, to warp into her berth on the western side. The bow hawser parts at last, and she drifts out towards Yerba Buena Island, then swings slowly round under steam, heads toward San José [at the south end of the Bay], and then, when half a mile away, turns gracefully, and, with her monster wheels beating the bay into a foam, comes rushing at full speed directly down toward the wharf. . . . The monster of the deep obeys her helm to perfection, . . . [coming] into her berth right alongside the wharf, and, before we have ceased wondering at the immense proportions of this magnificent specimen of American marine architecture, her wheels are reversed, and she has ceased to move.⁷⁷

In the meantime the activities on the dock increased until 'it culminates with the wharfing of the boat into such a state of excitement and confusion as to suggest to the mind of the spectator the Tower of Babel.'

Hackmen, boarding-house runners, touters of every denomination and a heterogeneous mass of seemingly self-interested humanity therefore crowd the gangways as soon as they are fixed, throwing cards, shouting names, hustling passengers and attacking baggage until chaos would almost seem to have returned again. . . . The utmost good humor, however, generally prevails, and as one passenger after an-

⁷⁶ *Weekly Alta*, 19 October 1872.

⁷⁷ Albert S. Evans, *A la California; sketches of life in the Golden State* (San Francisco, 1873), pp. 306-309. Hereafter cited as Evans, *California*. *Weekly Alta*, 26 June 1869.

other is appropriated and disappears, the excitement gradually quiets down, until soon the scene is virtually filled by Custom House officials and stevedores, when the discharging of cargo is vigorously commenced, and the snort of donkey engines and the rattle of trucks supercede the vociferous action of the human voice.⁷⁸

Cabin passengers landed first by an after gangway, having had customs inspection on board the ship, and departed from the wharf in hacks. Then the Chinese steerage, sometimes more than a thousand of them, came ashore by the gangway forward, carrying bedding, clothing, and all their possessions swung over their shoulders on bamboo poles. After rigid customs inspection, particularly for smuggled opium, they were permitted to leave the wharf. On their way through the streets to Chinatown, the immigrants were sometimes attacked by white ruffians, particularly in periods of anti-Chinese agitation.⁷⁹

Under normal operating conditions, the steamers remained at San Francisco more than two weeks between voyages, but the Pacific Mail's shore staff was able to make a ship ready for sea in much less time if necessary. When *China* arrived on 1 January 1873 to find *Great Republic* helpless with a broken shaft, she was unloaded, coaled, and loaded once more so that she could put to sea on 6 January.⁸⁰

The departure of the trans-Pacific steamers also attracted crowds to the wharf, although the event was generally attended with less confusion, clamor and hilarity than the arrivals. Steamers sailed precisely at noon, and by one o'clock had passed the Golden Gate. One passenger wrote that 'the great beam of the engine beat solemnly up and down, and the paddle wheels pounded away with the jerky motion caused by the "walking beam" engines of America; and we knew that if all went right, they would never be checked until we anchored in Japan. . . .'⁸¹

At both Yokohama and Hongkong, the trans-Pacific steamers anchored or made fast to the company's buoy rather than coming alongside a dock. Signal guns announced arrivals and departures, and the ships were no sooner at anchor than they were surrounded by barges and sampans from which the work of transferring cargo and coaling went on.⁸² For a time, the old steamer *Hermann* served as a store ship at Yokohama, and the ships from San Francisco made fast to her, but her services were soon required

⁷⁸ Ibid., 19 October 1872.

⁷⁹ Ibid., 26 June, 24 July 1869, 21 December 1872.

⁸⁰ *Alta*, 7 January 1873.

⁸¹ Thomas Woodbine Hinchliff, *Over the sea and far away being a narrative of wanderings round the world* (London, 1876), p. 309. Hereafter cited as Hinchliff, *Over the sea*. Hübner, *Ramble*, p. 182. *Steamer Alta*, 10 September 1867. *Weekly Alta*, 19 October 1872.

⁸² *Steamer Alta*, 30 November 1867, 6 July 1868. Ludovic, marquis de Beauvoir, *Pekin, Jeddo, and San Francisco. The conclusion of a voyage round the world* (London, 1872), p. 235. Hereafter cited as Beauvoir, *Pekin, Jeddo, and San Francisco*. Prime, *Around the world*, p. 87.

for coastwise voyages.⁸³ The call at Yokohama seldom lasted more than a day in each direction, but at Hongkong a week to ten days was generally spent, although when pressed for time the steamers could turn around there in four or five days.⁸⁴

The Pacific Mail paddlers received almost universal praise for their cleanliness and efficiency as well as for their sea-going qualities. One voyager wrote that *Colorado* shone like a mirror, with her masts freshly scoured, and her rigging irreproachable.⁸⁵ Another said of *China* in 1870 that the day before reaching Yokohama every inch of deck, bulwarks, stanchions, rigging and boats were scoured, tarred or painted, the whole ship being as 'clean as a Shaker meeting-house.'⁸⁶ 'No yacht can beat this *Great Republic* for neatness and comfort . . .' was the judgment of another.⁸⁷ A fourth traveller wrote, 'There are no steamers afloat which for elegance, comfort and spaciousness compare with those of this line.'⁸⁸ Such praise came from many others, but all comments were not favorable. The line was criticised in the *Hongkong Press* for 'obstinate, self-willed, stiff-necked' policy, and its service, speed and agents were compared unfavorably with those of the P. & O. According to the writer of this article, the Pacific Mail had lost most of its friends in the Orient during its first year of operation, and its managers were reminded that the line did not have a monopoly and that residents of the Far East were not as easily pleased as Americans.⁸⁹

The praises generally lavished upon the steamers were also directed toward the men who officered them. Commanders were men of experience and standing, usually having served the Pacific Mail for some time in the Panamá steamers before coming to the China line. Although the company regulations requiring strict discipline aboard seem to have been obeyed carefully, distinctions of rank were not carried to great

⁸³ *Hermann*. Wooden, side-wheel steamer. 1,734 44/95 tons, 234 feet, 11 inches x 39 feet, 6 inches x 31 feet, 7 inches, mean draft 19 feet, 6 inches. Two side lever engines built by Novelty Iron Works, diameter of cylinders 6 feet, length of stroke 10 feet, diameter of paddle-wheels 36 feet. 474 horsepower. Cost \$410,000. Built by Westervelt and Mackay, New York in 1847-1848 for the Ocean Steam Navigation Co. Operated New York-Cowes-Bremen 1848-1857. Sold to California, New York and European Steamship Co. 1858 and arrived San Francisco 27 November 1858. After passing through several hands, and doing some coastwise service, sold to Pacific Mail 1866. Sailed from San Francisco for Yokohama 1 March 1867. Served at Yokohama as floating hulk, freight depot and store ship 1867-1868. Used for coastwise voyages and chartered to Japanese daimios as a transport. Wrecked on Point Kwatzu 13 February 1869 while en route from Yokohama to Straits of Sangar with loss of 330 lives.

⁸⁴ *Steamer Alta*, *passim*.

⁸⁵ Beauvoir, *Pekin, Jeddo, and San Francisco*, p. 239.

⁸⁶ Seward, *Travels*, p. 35.

⁸⁷ Campbell, *Notes*, p. 155.

⁸⁸ Coffin, *New way*, p. 512. See also Hinchliff, *Over the sea*, p. 312.

⁸⁹ *Hongkong Daily Press*, copied in *Shanghai Recorder*, September 1868, Bancroft Scraps, CV, 11-12.

lengths.⁹⁰ 'The captain does not fancy himself an admiral or a commodore.'⁹¹ About twelve white officers and petty officers were carried in all. Their duties were exacting and their hours longer than on most ships, but the rate of pay on the trans-Pacific steamers was also higher than ordinary.⁹² The attention of the officers to the comfort and welfare of the passengers often evoked appreciative testimonials at the end of the voyage, and occasionally even verse was the result.⁹³

Soon after the inauguration of the China line, white seamen and negro stewards, which had formerly been the rule on the steamers of the Pacific Mail, were replaced by Chinese crews. The change was made at the time of President McLane's tour of inspection to the Orient in 1867. *Costa Rica's* crew was changed at the time she reached Hongkong in July of that year, and the other steamers followed. McLane reported that the resultant saving in wages and in cost of food for the crews was 'very great.'⁹⁴ The innovation had been advocated in the Orient in the spring of 1867 when a Shanghai correspondent wrote that people long resident in the Far East 'can ill brook the half independent and I-am-as-good-as-you-are air that white and even negro waiters of the present day assume.'⁹⁵ On the whole, passengers approved of the Chinese crews, praising their courtesy, cleanliness, efficiency and quiet. The Chinese were good seamen, carrying out their duties in connection with the operation of the ships commendably. They were certainly more satisfactory than the white sailors generally available in Pacific ports.⁹⁶ Aboard *China* in

⁹⁰ *Instructions to captains, P. M. S. S. Co.* (New York, 1874), *passim*. *Steamer Alta*, 30 November 1867. Beauvoir, *Pekin, Jeddo, and San Francisco*, p. 239. Hübner, *Ramble*, p. 193.

⁹¹ *Ibid.*, p. 186.

⁹² *Ibid.*, p. 186. When *America* sailed from New York for Hongkong she was manned by a crew of twenty-six officers and men. *America, Journal*, 27 May 1869.

⁹³ Campbell, *Notes*, p. 157. Hübner, *Ramble*, pp. 186-193. Prime, *Around the world*, pp. 70, 74. *Steamer Alta*, 30 November 1867. *Weekly Alta*, 26 October 1872.

The following appreciation from the cabin passengers in *China* in 1868 was inscribed to Captain George E. Lane.

'Ho! Smith of *Colorado*; ho! Bradbury of *Japan*,
Stick to Cape Horn, or Panama, 'or any other man.'
Ho! Eldredge, send one if you can upon the China coast,
Of whom with so much truthfulness his passengers can boast.
Ho! Fauntleroy of the *New York*, see that your flues be clear.
Ho! Doane of the *Republic*, may your shaft be quickly here,
For our Captain takes the elad [*sic*] now (and may he hold it long.)
'Mongst all the skippers of the line from Frisco to Hongkong,
Then three cheers for the *China* with all your might and main,
And three cheers for her gallant chief, the noble Captain Lanel'

Steamer Alta, 6 July 1868.

Oliver Eldredge was general manager of the Pacific Mail, at San Francisco. *Great Republic* was then at Yokohama with a broken shaft, awaiting another from San Francisco.

⁹⁴ *Pacific Mail, Report, 1868*, pp. 27-28. *America* received fourteen Chinese sailors at Hongkong. *America, Journal*, 18 September 1869.

⁹⁵ *Steamer Alta*, 29 June 1867.

⁹⁶ Campbell, *Notes*, pp. 152, 156. Hinchliff, *Over the sea*, pp. 312-313. Hübner, *Ramble*, pp. 186, 189. Prime, *Around the world*, p. 70.

1871 there were thirty-two Chinese stewards to wait on the table in the first cabin. They dressed in black caps, dark blue tunics, wide trousers and black felt shoes with white soles, their black pig tails hanging down to their heels. 'Fancy a huge cabin in which the small table of twenty-two guests is lost, with all these little Chinamen fluttering around them and serving them in the most respectful fashion, without making any noise.'⁹⁷ The chief steward and his assistants were German, and the ship's barber was generally a negro or mulatto.⁹⁸

One critic of the Pacific Mail attacked the practice of carrying Chinese crews. He condemned the line for sending out ships 'with a dirty crew of coolies to wait on table who had never before, perhaps, seen the civilized impliments [*sic*] of knife, fork, or plate, and who knew nothing of a business that required considerable training and experience, to say nothing of cleanliness and order . . .'⁹⁹ There was also serious objection in San Francisco to the employment of Chinese in the company's steamers, chiefly on the grounds that white seamen and waiters were thus kept from employment. This led to demonstrations against the Pacific Mail, and to some ineffectual attempts to delay the sailing of its steamers.¹⁰⁰

The steamers thus built and operated were dependent upon the income from freight and passengers to pay their expenses, for the subsidy from the Post Office Department was enough to defray only part of these costs. Passenger traffic, and especially that of the Chinese who travelled in large numbers in the steerage both eastward and westward, was an important item of income. At the outset, there were great hopes of making the trans-Pacific route an alternative to that by way of Singapore and the Red Sea for travel between the Far East and Europe. In 1868, it was reported that news from Hongkong was reaching England sooner by way of San Francisco than by the Red Sea, although the former was considerably longer. In 1871, the schedule time from Hongkong to Liverpool was forty-four days either westward or eastward, although the British and French steamers sailed more frequently making that route more popular. The Pacific Mail and the overland railroads of the United States attempted to encourage through travel, and often as many as a third of the passengers in the cabin of a trans-Pacific steamer were bound to or from Europe. It was possible for the P. & O. and Mes-

⁹⁷ Hübner, *Ramble*, p. 193.

⁹⁸ *Ibid.*, pp. 190, 193. A. D. Carlisle, *Round the world in 1870: an account of a brief tour made through India, China, Japan, California, and South America* (London, 1872), p. 234. Hereafter cited as Carlisle, *Round the world*.

⁹⁹ *Hongkong Daily Press*, copied in *Shanghai Recorder*, September 1868, *Bancroft Scraps*, CV, 11-12.

¹⁰⁰ *Steamer Alta*, 18 January 1868.

sageries Maritime to reduce their rates from Hongkong to a lower figure than those of the Pacific Mail, although the American company bested them on its Yokohama-Liverpool rate. Thus although the trans-Pacific route achieved some popularity for this through travel, it never seriously threatened the supremacy of the Red Sea route.¹⁰¹

Although the steamers were fitted to carry some 250 cabin passengers, they carried an average of only a little more than 30 on each voyage westbound from San Francisco, and about 47 eastbound.¹⁰² At the inauguration of service, first cabin passenger fares were \$250 from San Francisco to Yokohama, and \$300 to Hongkong. These were reduced in 1874 to \$150 and \$200. This change was only made in the face of competition, for in 1880 the fare to Yokohama was again \$250.¹⁰³

The cabin passengers were a varied lot, including American business men, missionaries, diplomatic agents, naval officers and tourists. There was always a goodly number of English travellers bent on both business and pleasure, and a sprinkling of Frenchmen, Germans, Danes and Russians. Wealthy Chinese often went cabin, but they kept much to themselves and were seldom seen by the other passengers. Japanese diplomats and business men were to be found aboard the Pacific Mail steamers, and the company carried a limited number of students to the United States free.¹⁰⁴

If the crossing were calm and the cabin passengers congenial, the voyage might be a very pleasant one. Reading, promenading, deck sports such as the ageless maritime 'hoop game' of throwing rope rings into numbered squares chalked on deck, eating and gossip filled the long, lazy hours. The missionaries aboard might organize a daily Bible class, or there might be lectures, literary readings or concerts. An unusually active group of passengers would organize amateur theatricals, publish a humorous newspaper, or subject the purser to a mock trial. Episcopal

¹⁰¹ Rates, 1871,	Liverpool-Hongkong	Cabin	\$450 via P. & O.	\$498 via P. M.
	Liverpool-Hongkong	Steerage	225 via P. & O.	184 via P. M.
	Liverpool-Yokohama	Cabin	600 via P. & O.	448 via P. M.
	Liverpool-Yokohama	Steerage	300 via P. & O.	169 via P. M.

Weekly Alta, 11 March 1871. See also *Bancroft Scraps*, CV, 9-10. *Steamer Alta*, 10 November 1866, 22 September 1868. *Weekly Alta*, 28 August 1869, 3 December 1870, 7 September 1872. Coffin, *New way*, p. 466. Seward, *Travels*, pp. 31-32.

¹⁰² *Steamer Alta*, *Weekly Alta*, *Alta*, *passim*.

¹⁰³ *Steamer Alta*, 29 December 1866. *Alta*, 24 February 1874. F. D. Bridges, *Journal of a lady's travels round the world* (London, 1883), p. 337.

¹⁰⁴ Beauvoir, *Pekin, Jeddo, and San Francisco*, pp. 239-240. Campbell, *Notes*, pp. 152, 154, 156. Coffin, *New way*, p. 466. Evans, *A la California*, pp. 310-313. Hinchliff, *Over the sea*, p. 313. Hüber, *Ramble*, pp. 190-191. Seward, *Travels*, pp. 31-32. *Weekly Alta*, 4 September 1869, 17 June 1871, 7 September 1872.

Important Japanese diplomatic missions crossed the Pacific on Pacific Mail steamers in 1867 and 1872. *Steamer Alta*, 30 March 1867. *Weekly Alta*, 20 January 1872. Pacific Mail, *Report*, 1868, p. 26.

services were held in the saloon on Sundays. The steamers boasted good libraries of classical authors and recent books on China and Japan. On the Fourth of July or the Queen's birthday there would be speeches and champagne. The smoking room, or 'Paradise Lost' as it was dubbed on one voyage, always had its share of convivial gatherings on less formal occasions. At the inevitable ship's concert, the performers were usually from among the cabin passengers and officers, but on one voyage four Chinese musicians from the steerage were invited to assist. Their numbers seemed interminable to the uneducated western ears of the cabin passengers.¹⁰⁵

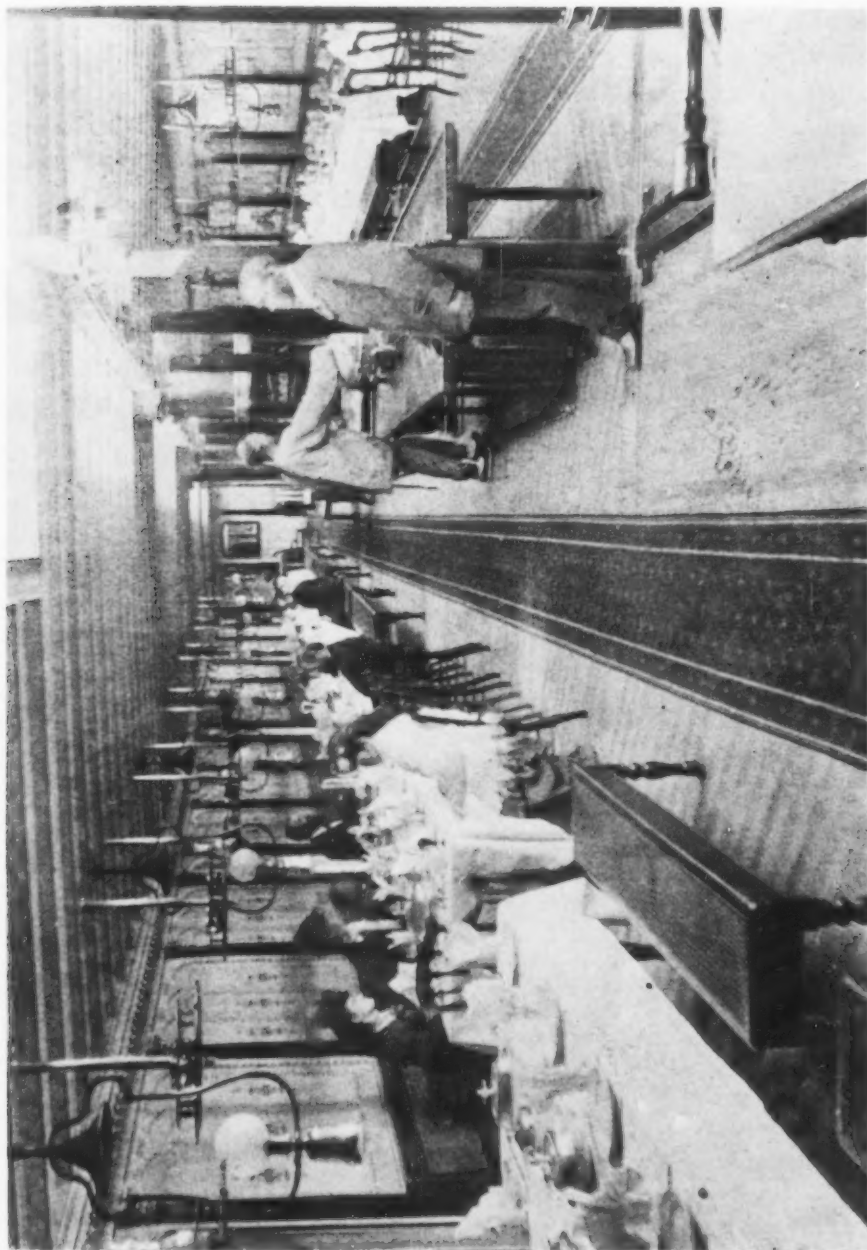
The fire drill, held on the first day after leaving port, was always an event to enliven the voyage. Within a few minutes after the signal by the steamer's whistle, the Chinese crew would have hoses in action on both hand and steam pumps, while others would be ready for service with fire extinguishers slung on their backs. At another blast of the whistle these were replaced, and all hands went to the boats. Within ten minutes these would be swung out, with crews seated and oars tossed, ready for lowering.¹⁰⁶

Throughout the first part of the voyage, the passengers looked forward with some excitement to meeting the steamer bound in the opposite direction. The Pacific Mail officials were anxious that the ships meet, as it provided a check on the courses steered, and the connection of the two steamers became a matter of honor with the captains. For days before the expected event, the passengers busied themselves preparing letters, and if the ships missed one another, gloom seemed to overspread the whole ship. When the meeting occurred in proper fashion, both steamers stopped, their passengers on deck and excited, and the westbound vessel sent her gig aboard the eastbound to exchange letters, newspapers, passengers lists and extracts from the log. After a few moments, the gig returned and 'was hoisted to its davits, the walking-beams of the two giant ships gracefully bowed to each other, the wheels gently revolved, the passengers repeated their cheers, and a gun from each deck announced that the meeting was over.'¹⁰⁷

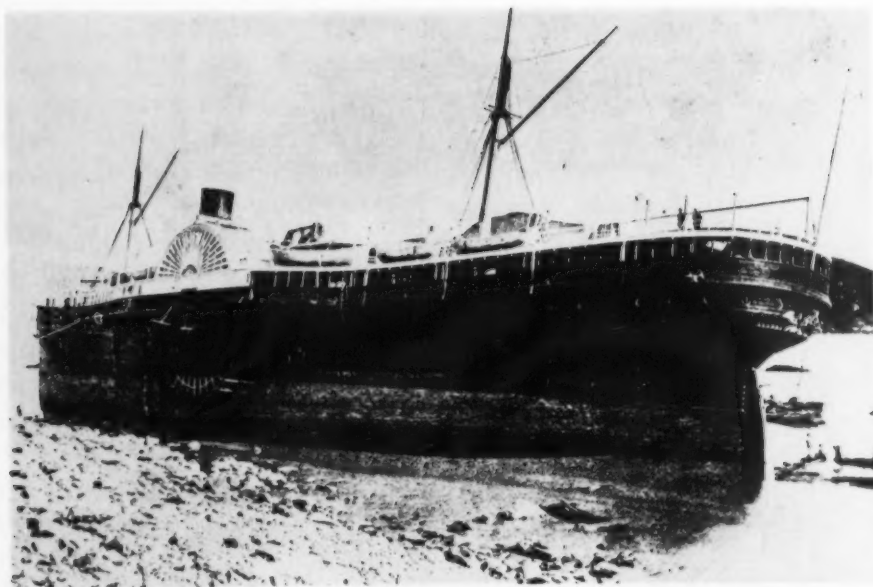
¹⁰⁵ Campbell, *Notes*, p. 172. Hübner, *Ramble*, pp. 189-190, 192, 200. Hinchliff, *Over the sea*, p. 316. Prime, *Around the world*, pp. 70-71, 74-85. Seward, *Travels*, p. 32. *Steamer Alta*, 30 November 1867, 6 July 1868.

¹⁰⁶ Campbell, *Notes*, p. 153. In *America*, there were fire drills monthly on the voyage from New York to Hongkong, and when carrying passengers across the Pacific, the crew was exercised at fire quarters within a few days after leaving Hongkong and San Francisco as well as in mid-Pacific. *America, Journal*, 29 May, 26 June, 24 July, 20 September, 12 October, 6 November, 21 December 1869.

¹⁰⁷ Seward, *Travels*, pp. 32-33. Hinchliff, *Over the sea*, p. 314. Hübner, *Ramble*, pp. 194-195. *Steamer Alta*, 6 July 1868.



First cabin saloon aboard *America*, 1868-1869
Reproduced from a photograph owned by Robert McRobert's



Alaska, 1868, ashore at Aberdeen, Hongkong Island,
after the typhoon of 22-23 September 1874

Judgment on the meals served in the cabin of the Pacific Mail's China liners varied greatly. Much depended on the tastes of the traveller, or on whether or not he suffered from seasickness during the voyage. All agreed that the table was bountifully supplied, although some complained that the meals were monotonous, and that they betrayed a marked preference for such 'national dishes' as pork and beans, waffles and squash.¹⁰⁸ Fresh meat was served throughout the voyage, live cattle and poultry being carried aboard, to be slaughtered as the need arose. This not only provided food, but returned a small additional income to the Pacific Mail from hides sold at the end of the voyage.¹⁰⁹ Westbound meats, fish, fruits and vegetables were carried, packed in ice, to be served on the cabin table.¹¹⁰ (Plate 7.)

Far larger in numbers, and more important to the revenues of the company were the Chinese steerage passengers carried. Previous to 1867 they had crossed the Pacific in sailing vessels, coming to California in response to the demand for inexpensive labor, and returning to China when they had gathered some wealth. A year before the opening of steamship service, the Pacific Mail sent representatives to China and among the Chinese of California to find the sentiments of prospective travellers.¹¹¹ The response to these investigations was satisfactory, and when service was opened Chinese passengers flocked to the Pacific Mail steamers. For the voyages on which there are figures available, the average eastbound number was 874, and westbound 543. There is reason to believe that if numbers were to be had on more voyages, they would average about 1,000 eastbound and 800 westbound.¹¹²

In 1866, the steerage rate from San Francisco to Yokohama was set at \$85, and to Hongkong \$55.50, but by the end of 1867, the Oriental steerage fare to Hongkong had been reduced to \$40 gold.¹¹³

It will be remembered that the steamers carried most of their steerage

¹⁰⁸ Campbell, *Notes*, p. 153. Carlisle, *Round the world*, p. 231. Hübner, *Ramble*, p. 198.

¹⁰⁹ Pacific Mail Steamship Co., *Cash, P and Q, passim.*, Ms., Henry E. Huntington Library. *Steamer Alta*, 30 Mar. 1867.

¹¹⁰ Coffin, *New way*, p. 513. Hinchliff, *Over the sea*, p. 312.

¹¹¹ In spite of these preparations, the service opened without proper co-ordination of the Shanghai branch so that passengers from that port for San Francisco had difficulty in connecting with the trans-Pacific steamer. The Hongkong agent of the Pacific Mail was ignorant of the necessary forms to be filled out in order to carry a large number of immigrants, and therefore *Colorado* was allowed to carry only twenty Chinese on her first eastbound voyage. *Sacramento Daily Union*, 3 August 1866. *Steamer Alta*, 29 June 1867.

¹¹² On many eastbound voyages there were as many as 1,250 steerage passengers. Exact figures were available for seventeen eastbound and nine westbound voyages. *Steamer Alta*, *Weekly Alta*, *passim*.

¹¹³ *Steamer Alta*, 29 December 1866, 30 November 1867. The lower Hongkong rate may be accounted for by the bulk of passengers from there, and also by the fact that Yokohama passengers would probably be whites, requiring more expensive food than Chinese.

passengers on the berth deck, although they also had some accommodations forward on the main deck. Except for a comparatively few doorless state-rooms, these passengers slept in standee berths consisting of wooden frames over which canvas was stretched which were set up in open spaces within the ship. Their quarters were well ventilated, and the ship's officers saw that they were kept clean. Chinese steerage passengers generally stayed below decks, playing games of chance or lying in their berths, and there was a space curtained off for opium smoking. Deck space was provided for them, however, and in warm weather or at the time of meeting ships at sea they swarmed out into the open.¹¹⁴

Food for the steerage was prepared by Chinese cooks in their own galley, and many wealthy Orientals preferred to travel in the steerage rather than the cabin, because the food was more to their taste. Meals for the steerage consisted of rice, 'awfully high' dried fish, fresh pork, boiled cabbage, stewed daicon (large radish), with duck's eggs as a particular delicacy.¹¹⁵

Not only did the Pacific Mail steamers carry large numbers of passengers, but cargo offerings were satisfactory from the beginning. From San Francisco they carried principally flour and treasure, the latter in gold and silver bars and Mexican dollars.¹¹⁶ Westbound, rice, tea and silk were the chief commodities, although in addition there was an amazing variety of Oriental goods and foods, going principally to the Chinese in the United States.¹¹⁷ The cargoes arriving at San Francisco averaged about 1,300 tons, although some were as large as 2,000. Westbound, the bulk

¹¹⁴ Beauvoir, *Pekin, Jeddo, and San Francisco*, p. 236. Campbell, *Notes*, pp. 155, 157. Carlisle, *Round the world*, pp. 231-232. Hübner, *Ramble*, p. 194. Seward, *Travels*, pp. 32, 35. *Steamer Alta*, 19 October 1867.

¹¹⁵ Bridges, *Journal*, p. 337. Carlisle, *Round the world*, pp. 231-232. Coffin, *New way*, p. 465. Prime, *Around the world*, p. 78. *Steamer Alta*, 19 October 1867.

¹¹⁶ In addition there were considerable quantities of oats, barley, wheat, quicksilver, liquors, beans and dried fish as well as provisions and goods used by Americans and Europeans resident in the Far East. *Steamer Alta*, *Weekly Alta*, *passim*.

¹¹⁷ For example, *Colorado's* manifest for voyage 3, arriving San Francisco 14 September 1867, included the following: 10 packages arrow root, 6 packages bamboo ware, 2 packages books, 208 packages cloves, 339 packages coffee, 100 packages cassia, 78 packages clothes, 25 boxes salted eggs, 597 empty [quicksilver] flasks, 254 packages fire crackers, 14 packages furniture, 8 packages joss sticks, 32 packages lily roots, 715 packages matting, 67 packages medicines, 4 packages shoes, 34 packages oil, 75 packages opium, 218 packages pepper, 356 packages sundries and wine, 1,845 packages rice, 847 packages rice and tea, 2,822 packages sundries, 422 packages sundries and pepper, 171 packages sundries and rice, 328 packages sundries and tea, 320 packages spices, 6 packages shoes etc., 4 packages silks and threads, 100 packages sugar, 5 packages silk goods, 1 package silverware, 1,699 packages tea, 1 package woolens, 1 package wine, 340 packages merchandise. Hongkong-San Francisco. 63 packages baggage, 52 packages charcoal, 2 packages silk, 2,081 packages tea, 54 packages merchandise. Yokohama-San Francisco. 19 packages brandy, 2 packages goods, 1 package silks, 256 packages tea, 6 packages merchandise, Shanghai-San Francisco. 169 packages silk, 12 packages merchandise, 5 packages curiosities, 310 packages tea Yokohama-New York. 31 packages silk Shanghai-New York. 11 packages tea Yokohama-Callao. *Steamer Alta*, 18 September 1867. 1,140 tons in all. *Steamer Alta*, *Weekly Alta*, *passim*.

carried by the paddle-wheelers was somewhat smaller, ranging under 700 tons.¹¹⁸ There was also a brisk trade between Yokohama and Hongkong, so that for example *Great Republic* in 1868 discharged 700 tons of merchandise and \$260,000 in treasure at Yokohama from Hongkong, before sailing with a cargo of 1,200 tons for San Francisco.¹¹⁹

In spite of prophecies to the contrary, the operation of the China line in the era of the side-wheelers seems to have been profitable to the Pacific Mail. The costs of building the ships and opening service were heavy, but income from passengers and freight was unexpectedly large. President McLane reported that up to the end of February 1868, the first thirteen months of service, the expense of organizing and equipping the China line had been \$4,201,050.60, and that by the time all the ships were completed, the cost would be little less than \$6,000,000.¹²⁰ For the first five round voyages made by the China steamers, the total working expenses were \$60,560.76 more than the receipts from passengers and freight. The mail subsidy for these voyages amounted to \$203,333.33, however, making a profit of \$147,772.57 for the company.¹²¹ Critics

¹¹⁸ *Idem.* Pacific Mail Steamship Co., *Cash books, passim.*, Ms., Henry E. Huntington Library.

¹¹⁹ *Steamer Alta*, 22 September 1868.

There is only scattering evidence as to freight rates. The charge for treasure was one per cent of the value shipped. When he was at Shanghai in 1867, President McLane reported reducing the tea rates from that port to New York from \$45 to \$36 per ton. In 1867 the merchandise rate from Hongkong to New York was \$2.20 per cubic foot, of which \$1.00 was the proportion of the trans-Pacific steamer. Pacific Mail, *Report, 1868*, p. 27. Pacific Mail Steamship Co., *Journal*, I, p. 269. Ms., Henry E. Huntington Library.

¹²⁰ These figures referred to currency rather than gold. Pacific Mail, *Report, 1868*, pp. 22-23.

¹²¹ For the first five round voyages to China, working expenses were \$673,395.98.

Total receipts for passengers and freight were \$612,835.22.

Passengers carried	Through westward	2,924
	Through eastward	1,451
	Local westward	120
	Local eastward	216
		4,711
Total income from passengers \$346,650.41 currency.		
Cargo carried	Freight and merchandise	
	Through westward	3,570 tons
	Through eastward	6,744 tons
	Local westward	603 tons
	Local eastward	2,150 tons
		13,067 tons
	Treasure	
	Through	\$3,370,657 value
	Local	752,759 value
		\$4,123,416 value
Total income from merchandise freight		\$217,785.32
Total income from treasure at one per cent		41,234.16
Total income from merchandise freight and treasure		\$258,019.48 [sic]

Pacific Mail, *Report, 1868*, pp. 23-24. *Review of the report of the president of the Pacific Mail Steamship Co.* (New York, 1868), p. 12.

pointed out that the line was expensively operated, and could not be profitable over a long period of time.¹²² As matters turned out, traffic increased after the first year, and by 1876 the excess of income over expenses for the trans-Pacific service was \$60,560.76, not counting the subsidy.¹²³

The Pacific Mail had arrangements in effect to supply coal for its Panamá steamers, and these were expanded for the China vessels. In 1868, the president reported the investigation of possibilities of securing coal from North China and Siberia.¹²⁴ It generally cost \$7 to \$15 a ton in San Francisco, depending on grade and source. Some coal came from Vancouver Island and Australia, but the best quality was produced in the mines of the British Isles and the eastern United States.¹²⁵

During their years of service, the Pacific Mail's China side-wheelers had their share of bad fortune, and the careers of two of them were terminated by disastrous fires. They were not unlucky ships, however, and their general consistency of service gave them good names in the world of shipping and travel.

Great Republic had particular trouble with her paddle-wheel shaft. On 23 March 1868, when en route from San Francisco to Yokohama, her starboard shaft was partly fractured. She had been at sea sixteen days and was 3,387 miles from San Francisco and over 2,000 from Yokohama. Honolulu was 1,420 miles away, and the Pacific Mail's station at Brooks's Island 300 miles. Captain Seth Doane stopped the ship immediately, fore-and aft-sails were set, and the full set of yards and sails was sent aloft so that the ship could be put under all sail. In the meantime she lay to for over thirty-one hours, the crew working incessantly to take the buckets

¹²² Ibid., pp. 13-17, 23-25.

¹²³ Year ending 20 April 1876.

Earnings	Trans-Pacific line	Passengers	\$910,252.02
		Freight	627,029.98
			\$1,537,282.00
Expenses	Trans-Pacific line		\$1,188,996.13
Subsidy	Trans-Pacific line		\$500,000.00

[Pacific Mail Steamship Co., *Annual report, 1876*, p. 2.]

¹²⁴ Pacific Mail, *Report, 1868*, p. 21.

¹²⁵ Random coal prices in Pacific Mail records are as follows:

1867. Anthracite coal sold by P. M. to U. S. Navy at Honolulu at \$19.56 per ton, gold. Pacific Mail Steamship Co., *Cash, N*, p. 12. Ms., Henry E. Huntington Library. Subsequent Ms. reference in this note are to materials at Huntington Library.

1868. Coal supply of Pacific Mail valued at \$27 per ton. *Review of the report of the president of the Pacific Mail Steamship Co.* (New York, 1868), p. 13.

1870. Coal \$ 9.78 per ton. Pacific Mail, *Cash, P*, p. 298, Ms.

1871. Coal \$11.38 per ton. Pacific Mail, *Cash, Q*, pp. 89-90, Ms.

1872. Coal \$12.06 per ton. Pacific Mail, *Cash, Q*, p. 397, Ms.

1874. Coal \$11.59 per ton. Pacific Mail, *Cash, S*, p. 199, Ms.

1875. Coal \$ 7.00 per ton. Pacific Mail, *Cash, U*, p. 176, Ms.

off the starboard wheel, after which it was lashed to the paddle box. Then the engine was started ahead, completing the fracture of the shaft, and *Great Republic* continued her course to Yokohama under full sail and with the port wheel revolving slowly. Although bad weather was experienced so that the ship was forced to lie to under bare poles for twelve hours, she finally came safely into Yokohama harbor on 7 April. Here she remained until *Colorado* could bring a new shaft out from San Francisco for her, *New York* taking up her uncompleted voyage.¹²⁶

Great Republic broke her shaft again in 1872. This time it happened just before leaving Yokohama for San Francisco, but as the fracture was only partial, Captain Cobb decided to sail in spite of the accident. The ship met fair weather all the way across the Pacific, and reached San Francisco still using both wheels, an exploit truly characteristic of the heroic age of steam at sea.¹²⁷

A severe test of the hull construction of *Alaska* came in 1874, when she went through a typhoon of unusual intensity at Hongkong. The steamer had arrived at Hongkong on 1 September with a broken shaft, and had been taken around to the Aberdeen side of Hongkong Island where she was docked and recoppered while awaiting a new shaft. Preparations for receiving the shaft were completed on the afternoon of 22 September, and she was made fast to the dock ready to have it installed. In the early evening the falling glass and heavy wind presaged the typhoon to come, and just after midnight it burst with great fury. All *Alaska's* hawsers were snapped, and dragging her anchor, she drifted helplessly across the bay until her stem struck on the shore, her anchors keeping her from going broadside on the rocks. The wind shifted suddenly during the typhoon, and the ship drifted back again to Aberdeen, where she struck broadside on the rocks and began to pound. With dawn the wind abated, and *Alaska* lay listed off shore, hard and fast aground with her port bilge exposed at low tide. The staunch hull had gone through the pounding of the night without damage, and preparations for refloating the ship were immediately begun. (Plate 8.) Twelve hundred tons of coal and stores were landed, pontoons were fastened around the hull, and before the end of the year she was afloat once more reaching San Francisco on 16 February 1875.¹²⁸

Although the giant Pacific Mail paddlers might brave all seas, they were all too vulnerable to the attacks of fire. In spite of the apparatus

¹²⁶ *Steamer Alta*, 30 May, 6 July, 22 August 1868.

¹²⁷ *Weekly Alta*, 21 December 1872.

¹²⁸ *Alta*, 8 November, 1, 23, 24 December 1874, 1 January, 17 February 1875.

for fighting flames and the precautions which have already been described, fire was greatly to be dreaded aboard them.

The last and largest of the steamers, *America*, was the first to meet a disastrous end. On the morning of 24 August 1872 she arrived at Yokohama from San Francisco, making fast to the Pacific Mail buoy in the harbor. Most of the day was occupied in discharging and loading cargo, and in replenishing the coal bunkers. At about eleven o'clock in the evening, Quartermaster James Wilson was making his regular inspection of the ship when he smelled smoke, and discovered fire in the steerage quarters aft below the first cabin saloon. This part of the ship was not then being used for passengers, and the fire started in some bales of hay stowed there as feed for the animals aboard. Once the alarm was spread through the ship, there was no lack of hands to fight the fire. Organization was somewhat lacking, however, as all plans for such emergency had been made with the idea that the ship would be at sea. Steam had been allowed to go down in the main boilers, and the pressure in the donkey boiler was insufficient to give an adequate stream of water. Thus although the blaze had seemed small at eleven o'clock, the ship was a roaring inferno within a few minutes, and before midnight had been abandoned by all hands.

Of the fifty-nine lives lost in the burning of *America*, fifty-three were among the Chinese steerage passengers, the others being three Europeans and three Japanese. The Chinese passengers were desperately anxious to save their belongings, and as a result many jumped overboard weighted down with money belts or other heavy articles. Others threw trunks and boxes into the bay on the heads of those already struggling in the water, and dozens were drowned when the accommodation ladder forward, on which they were clustered, gave way with them. Although there was an ample supply of life-belts, little use was made of them. Boats from the ships at anchor nearby rendered what aid they could, although the crews of the coal lighters alongside cast themselves adrift rather than aiding in the rescue work. When the conditions of the fire were investigated, the conduct of Captain Seth Doane and his crew was praised for activity and heroism, albeit perhaps lacking in proper direction.

America burned all night, and well into the next day. Attempts to sink the ship by gunfire proved unavailing, and only the work of a steam fire engine sent out on a tug, together with a heavy rain, finally drenched the flames, although the hull was still smoking when it was towed away in the afternoon. It evidently sank later, for diving operations were carried on in order to recover the treasure aboard.

It was the opinion of the Court of Inquiry at Yokohama that the fire was of incendiary origin. There was evidence that it was noised about ashore that the ship would burn on the night she did. Bad feeling in Yokohama toward the Pacific Mail because of its use of Chinese crews, and the possibility of looting the Chinese passengers during the fire were the chief motives assigned, but these were unsupported by concrete evidence, and the circumstances leading to the loss of the ship remained a mystery.¹²⁹

A little over two years later, the Pacific Mail lost another steamer by fire under even more harrowing circumstances than *America*. On 11 December 1874, *Japan*, under the command of Captain E. R. Warsaw, got under way from Yokohama for Hongkong. She carried two cabin passengers, two European steerage, and 425 Chinese steerage passengers in addition to 128 officers and crew. There were 620 tons of cargo, \$328,508 in treasure, and seven bags of mail aboard. On the night of 17 December, *Japan* was heading through a rough sea off Breaker Point, some 175 miles from Hongkong, when the alarm of fire was sounded at 11.25 P.M. The fire seemingly originated in the forward coal bunker, under the freight deck. At Yokohama this bunker had been filled with coal, wet from a heavy rain which fell as it was being taken aboard, and the fire was evidently the result of spontaneous combustion.

As soon as the alarm was given, the ship's head was swung toward shore, the ventilators turned from the wind, and every effort made to subdue the fire. There was no dearth of pressure for operating the pumps this time, and within ten minutes of the alarm some twenty-one streams of water were playing on the fire. It had gained too much headway, however, and by 12.45 A.M. the signal to abandon ship was given. There was much confusion in leaving the vessel, and the loss of life was appalling. Most of the Chinese passengers were forward, and the fire cut off communication with the after part of the ship where most of the life boats were located. Attempts to save belongings, darkness, rough sea and panic went far to account for the loss of 391 out of the 425 Chinese passengers. In addition, one European steerage passenger and 23 officers and crew were lost with the ship. Captain Warsaw left in the last boat at 1 A.M., the steamer being then enveloped in flames amidships. He remained in the vicinity of the wreck until noon, engaging a passing fishing junk to aid in the search for survivors.

At Hongkong, a Court of Inquiry praised captain and crew for put-

¹²⁹ *Burning of America*, *passim.*, especially pp. 429-436. *Weekly Alta*, 7 September, 5, 12, 19, 26 October, 23 November, 7 December 1872.

ting forth every possible effort to save the ship, but criticised the insufficient inspection of bunkers and the lack of proper management in lowering the boats.¹³⁰

The year of *Japan's* loss was also that in which the Pacific Mail's first iron, screw steamer made a voyage across the Pacific. A policy of providing more modern steamships had been adopted by the company, and the day of the wooden side-wheeler was rapidly passing. In 1876, *Colorado* and *Great Republic* made their last voyages to China.¹³¹ *Alaska* and *China* remained in the service a little longer, making a few voyages in 1877 and 1878. On 6 March 1879, *Alaska* sailed from San Francisco for the Far East on her last trip, but the honor of making the final trans-Pacific voyage was reserved for *China*, which headed out through the Golden Gate on 2 June of the same year.¹³²

Thus for thirteen years, the great side-wheelers plied back and forth across the Pacific. During the first eight years of this period, they were the only vessels on the route, and in the following five years of transition, they were gradually retired to make way for the more modern iron, screw steamers. In 1867, the Pacific Mail had been faced with the problems of opening a service into a strange part of the world. Perhaps it was not unwise to pioneer this route with ships of a type which it had developed and operated successfully elsewhere. Only when the China line was a well-established institution did the Pacific Mail turn to the construction of ships of a different type to operate on it. The Pacific Mail's first trans-Pacific fleet not only marked a new path of oceanic commerce, but also embodied the end of an era in which the steamer was not yet quite at home in the open sea.

¹³⁰ Chief Engineer John Henry Cosgrove was censured for giving dispiriting orders. He denied giving the command, 'Every man for himself.' It was his assertion that the coal taken aboard at Yokohama was dry, and that the fire must have originated in the cargo. *Alta*, 31 January, 17 February 1875.

¹³¹ *Great Republic* sailed on her last voyage from San Francisco for China on 1 September 1876. She was turned over to John Roach in part payment for the new screw steamers which he was building for the Pacific Mail. On her last voyage to China, she had experienced a severe typhoon which had stripped the paddle boxes and carried away some spars. The report that her hull was severely strained at that time was denied. She was sold by Roach to Pierre B. Cornwall for a reported \$25,000, and in June 1878 began regular voyages between San Francisco, Astoria and Portland. On 19 April 1879 she was wrecked on Sand Island, Columbia River Bar, and by 2 May had broken up. *Alta*, *passim*, and 13 June 1878. *San Francisco Daily Evening Bulletin*, 29 June 1878. Edgar D. Wright (ed.), *Lewis and Dryden's marine history of the Pacific Northwest* (Portland, 1895), pp. 256, 265-266.

Colorado sailed on her last voyage to China 1 March 1876. For her end see note 35.

¹³² *Alaska* made two voyages in 1877 and one voyage in 1878. She was rebuilt as a hulk in 1879, and sent to Acapulco in 1882, where she remained as store ship at least until 1885.

China was kept by the Pacific Mail as a reserve ship until 1886, when she was broken up. *Alta*, *passim*. Bureau of Marine Inspection and Navigation, Department of Commerce, *Record of registers*, no. 17, pp. 11, 219. Ms., The National Archives. *Annual report Pacific Mail Steamship Company*, April 30, 1882 [(New York, 1882), p. 2]. *Annual report Pacific Mail Steamship Company*, April 30th, 1885 [(New York, 1885), p. 4].



Mr. Joseph Peabody of Salem, Massachusetts and His Punch

BY AUGUSTUS PEABODY LORING, JR.

SEVERAL of those who were present at the dinner of the Peabody Museum Marine Associates in Salem on Saturday, 3 May 1941, have asked me for the recipe for the punch that was served and for a word about Joseph Peabody who brought the recipe from the West Indies during the first part of the nineteenth century.

On 9 December 1757 Joseph Peabody was born in Middleton, Massachusetts, the son of Francis Peabody, one of the first settlers of Topsfield, Massachusetts. At the time of the Battle of Lexington Joseph Peabody was too young to be enrolled in the militia, but joined the Boxford Volunteers and was noted for his skill as a marksman.

Having been brought up with the smell of salt water in his nostrils, like many young men of that time he inclined towards a sea-faring life. Our navy was then hardly a navy at all, as our few ships were ill-equipped and ill-officered and held out little chance for promotion to an ambitious person in the service of his country. Our private armed merchant marine, on the other hand, not only had a fine reputation and offered every inducement to a brave and enterprising man, but it was also considered highly patriotic to serve in it. The merchant marine certainly reflected as much glory as our navy and it was far more effective. Mr. Peabody therefore sailed first in Mr. E. H. Derby's privateer *Bunker Hill*, which voyage terminated unsuccessfully. His second voyage was in the *Pilgrim*, Hill master, belonging to Messrs. G. and A. Cabot. They had the good fortune to fall in with a British merchantman, deeply laden but strongly armed. After a short action and the loss of her captain she surrendered and Mr. Peabody as prize-master took the vessel safe into Thomaston, Maine. He began a second voyage in the *Pilgrim*, but the privateer having been dismantled he was obliged to return to Salem, and abandoned the sea for the time being. Feeling that his early education had been inadequate for the career of his ambition, he determined on a course of further study which he pursued with great assiduity and diligence in order that he might gain



Joseph Peabody

Silhouette owned by Augustus Peabody Loring, Jr.

promotion in the future. When he had completed what he considered the necessary studies which he had planned for himself, he made a voyage to Gottenburg in the letter of marque *Rambler* and after that sailed as prize-master aboard the privateer *Fish-hawk*, Captain Foster. After being out a few days Foster laid his vessel alongside a large ship which proved to be a British man-of-war and captured the *Fish-hawk*. Mr. Peabody then spent a short time as a prisoner on board a prison ship in St. John's, Newfoundland, but afterwards was exchanged and returned to Salem.

This experience killed Mr. Peabody's ambition for any more privateering and he next embarked in the letter of marque *Ranger* owned by Messrs. Henry Sargent of Boston, and Henry Gardner and Ward & Chipman of Salem. Thomas Simmons was master, Thomas Perkins first officer, and Mr. Peabody second officer. In the winter of 1781-1782 they sailed from Salem with a cargo of salt which they disposed of at Richmond, Virginia, and proceeded to Alexandria where they loaded flour for Havana. It is interesting to note that part of the cargo was from the plantations of George Washington and was preferred by the Spaniards, who showed their confidence in the brand by the fairly unusual step of receiving it at the marked weight. On her return to Alexandria for another cargo of flour, on 5 July 1782 the *Ranger* dropped down the Potomac and running into head winds near the mouth was forced to anchor. About eleven o'clock that night boats were seen making for the ship, and Captain Simmons not allowing them to come alongside, they discharged their guns and badly wounded him. Immediately the guns on the *Ranger* were manned and muskets were given to the crew. By this time the boats were grappling the ship but cold shot from the *Ranger* was dropped into them so that they finally gave way. Mr. Peabody, who had not had time to dress, was in a white shirt and received several wounds. One assailant climbed over the bulwark and was aiming his pistol at Mr. Peabody when one of the crew cut off the man's hand. The seaman who had thus saved his life was gratefully pensioned by Mr. Peabody for the rest of his life. These assailants proved to be a band of Tories who had been infesting the bay for some time.

As Captain Simmons was incapacitated and the *Ranger* damaged it was necessary to return to Alexandria. Mr. Perkins, the first officer, took command while Mr. Peabody became the first officer. After Captain Simmons recovered he again took command but kept Mr. Peabody as his first officer. After various experiences at sea, among which they were once chased for thirty-six hours by a British man-of-war, they returned to Salem.

The war being ended, commercial activities at Salem greatly increased, and Mr. Peabody was promoted to be master in the employ of Messrs. Gardner, of Salem, and Mr. Perkins accompanied him as chief mate. Mr. Perkins afterwards became associated with him in business at Salem and amassed a very large fortune, as did Mr. Peabody. After various voyages Mr. Peabody had realized sufficient funds to enable him to purchase a schooner named the *Three Friends* which he commanded himself on voyages to the West Indies and to Europe. He was constantly at sea for several years, and was a painstaking master and a shrewd trader. In 1791 he retired from the sea, though he made a single trip to the West Indies as a passenger and it was then, I believe, that he brought back the recipe which I append at the end of this article. From then on he prospered, and, not failing to use every advantage which the commerce of the day yielded under the fostering hand of our young government, rose to become one of the wealthiest and most influential men in Salem. He built and owned eighty-three ships, which in every instance he freighted himself, and during their operations he employed upwards of seven thousand seamen. Starting in the year 1811 he advanced to the rank of shipmasters thirty-five men who had entered his employ as boys. His vessels made 38 voyages to Calcutta, 32 to Sumatra, 17 to Canton, 47 to St. Petersburg, and 10 to other ports in northern Europe, and 20 to the Mediterranean. Their voyages to the West Indies and the Spanish Main are too numerous to tabulate.

Mr. Peabody was one of the largest taxpayers in Salem. He always offered the greatest hospitality to all that entered his house there, and was a liberal entertainer on all suitable occasions. I have no doubt that this Punch graced many of his entertainments. He died on 5 January 1844, at the ripe old age of eighty-six, a good age in those days when men started life early and worked hard.

PEABODY PUNCH

- 1 Bottle Best Jamaica Rum
- 6 Glasses of Cognac
- 3 Glasses of Madeira
- 1 Doz. Large Limes or 2 Doz. Small
- 1 Jar of Guava Jelly
- 1 Pint of Green Tea
- Sugar to taste.

Rub sugar on limes to get the essential oil diffused into the sugar. Dissolve two-thirds of the sugar in the tea. Then cut the limes, squeeze and add their juice to the

remainder of the impregnated sugar. Dissolve the guava jelly in a pint of boiling water. Mix all these until you get right sweetness; then add 1 bottle of best Jamaica Rum, 3 glasses of good Madeira and 6 glasses of good Cognac. One may weaken said concoction by adding about a quart of boiling water, which is not advised. It should stand for at least twelve hours, and better twenty-four.

Let a large lump of ice float in the punch for an hour before serving, which serves two purposes—making the concoction cool and pleasant to the taste, and diluting it to a pleasant consistency.

Bottle any punch left over for a future occasion, as its pleasantness improves with age.

Due to the exigencies of the present war some of the liquors required are prohibitive in price for use in a Punch, and I have, after a great deal of experimenting, devised an alternative. Although no substitute can ever fill the place of the original, for a Punch like everything else is no better than its component parts, nevertheless this alternative has the characteristic taste of the original Peabody Punch. That is, if you do not have the two to compare side by side. Also, it is far more suitable for the pockets of the average seaman of today.

INEXPENSIVE RUM PUNCH

BY A. P. LORING, JR.

- 3 bottles of S. S. P. One Star Rum
- 1 bottle of S. S. P. Gold Coast Port
- ½ bottle of Bordeaux Superieur Rouge
- ¼ bottle of Cockburn Smithes Carlos Port (S.S.P.)
- ¼ glass of Cusenier Grenadine
- ¼ glass of Hay's Five Fruits
- 1-10 oz. jar of Overland Guava Jelly
- 1 pot of strong tea
- 1 doz. oranges
- 1-½ doz. limes
- 2 lemons

Mix liquors together. Press oranges, limes and lemons, pour strained juice into the mixed liquors. Dissolve the jar of Guava Jelly in the hot tea, then pour into brew. Sweeten to taste with the Cusenier Grenadine and Hay's Five Fruits, using slightly more Five Fruits than Grenadine. Bottle in gallon jugs (makes about gallon and a half) with cork out over night. Dilute with two bottles of Canada Dry Ginger Ale. Chill and serve very cold.

I hope the recipes will justify this rather sketchy and inadequate preamble to the real object of the article, the PEABODY PUNCH.

Wreck of the Ship General Oglethorpe—1802

BY ROBERT MAC KAY¹

EDITED BY CHARLES F. MILLS

I SAILED from Charleston on the afternoon of Sunday, the 31st January 1802, in the Ship *General Oglethorpe*² (Plate 9), William Patterson,³ Master, for the Havana, intending to touch off Tybee Bar to take on board the Captain who had gone round to Savannah, and to receive some Slaves to insure our admittance into the Havana, of which we were rather doubtful though the Ship was only in ballast; the wind was at N.E. and under reefed Topsails we ran the distance by midnight and lay to; at daylight the weather was thick and threat'ning and blowing fresh;—at 8 o'clock we made the lighthouse and discovered two Pilot-

¹ This narrative (the original is owned by the editor) was written by Robert MacKay (Plate 10), a Savannah, Georgia, merchant, one of the owners of the ship *General Oglethorpe*.

² The *General Oglethorpe* was built by Colonel John Patterson at St. Mary's, Georgia. Colonel Patterson (1753-1801) was a well-known Philadelphia shipbuilder whose yard adjoined that of Joshua Humphreys. When Humphreys began the construction of the frigate *United States*, Patterson's yard apparently was taken over and Patterson moved with his family to St. Mary's to follow his profession there. The *General Oglethorpe* was described by MacKay in a letter to his wife dated 20 February 1801 at St. Mary's. 'On arriving here this day about 1 o'clock, I was presented with a view of the most beautiful & superb object I ever beheld in my life—in fact words are entirely out of question to describe the new Ship; to form any idea you must see her. She was launched at a little before 12 o'clock on Wednesday, & went in the water without sustaining the smallest injury although her weight was so great as to crush the ways to atoms as she passed over them.'

The oil painting of the *General Oglethorpe* illustrated in connection with this account (Plate 9) is an excellent example of the early work of Robert Salmon, a British artist who came to Boston in 1828, and painted in this country thereafter. Although it is unsigned, the canvas bears all the identifying marks of the artist's style. Only one or two of Salmon's paintings earlier in date, have been found, and these are English ships. This view shows her off the English coast on what was presumably her maiden voyage to a foreign port.

In a period when marine painting was approaching a set and standardized form—the hard and linear profile ship portraiture subordinating all elements of the scene to the vessel itself—this oil proves that the seascape unified and whole could be a work of art. Although Salmon has placed his three views of the *General Oglethorpe* in accordance with the accepted formula of his time (broadside, bow, and stern) his study of cloud and wave structure is as seriously considered as the anatomy of the vessel itself. Long before his time the masterly suppleness of hand and fine laying on of pigment, shown by such as the Dutch school of artists had vanished, but Salmon retained enough of their breadth of vision to make a fine spacious picture. Acknowledging his touch to be rather crisp and tight, his edges sharply defined rather than blended, it is yet no small compliment to say that his color and design are superb, and his management of the composition as a whole, is assured and commendable. Even a few ship paintings of such quality do much to leaven the run-of-the-mill stuff which many of Salmon's contemporaries turned out so abundantly.

³ William Patterson was the son of John Patterson. He commanded several Southern vessels and eventually became master of a constant trader between New York and Liverpool.

Boats coming out, in one of which we supposed was Captain Patterson and the Slaves, but in this we were disappointed, when we immediately determined to carry the ship in and having taken on board a Pilot, by 11 O'clock we were at anchor above the Lighthouse. Mr. James Broadfoot of Charleston, who was a passenger on board, and myself went to Savannah in the Pilot Boat, and met Captain Patterson on the river, who went down with the Slaves and took charge of his Vessel. I did not get up to Savannah until dark, when we were just in time to meet a very agreeable party at a dance at Mr. Meins.⁴ On Tuesday morning, after breakfast, Mr. Broadfoot and myself returned to the Ship, it was calm and we could not go to sea.

The wind was fair on the morning of Wednesday, the 3rd February and with a fine breeze from the Westward we crossed the Bar, and at 12 o'clock found we had made twenty seven miles on an E.S.E. course. Several vessels went to sea with us but from the *General Oglethorpe's* very fast sailing we soon lost sight of them. We had fine pleasant weather with light breezes and at midday on the 4th had made 101 miles on S.E. course. We had then very light airs and at 12 o'clock on Friday the 5th were in latitude 27 39 North and by reckoning in Long. 76 40 West. Captain Patterson then thought it proper to alter his course which he did to fly east and at 6 o'clock in the evening, conceiving from the log we had diminished our latitude to about 27 30, we hauled up SSE intending to run until midnight under easy

[two pages missing]

with thunder and lightning, the sea breaking over the wreck tremendously and threatening us with instant dissolution. At this time (I imagine from the rise of the tide) she righted and Mr. Frazer, the Second mate, informed me there were five feet of water in the hold; relying on the immense strength of the vessel I was in hopes she had not met with much injury, and as she was upright, if the gale did not increase, we might yet save her. The water in the hold was, I supposed, from some of the Punch-eons which might have bilged when the ship lay on her beam end, and as I found the people were uneasy I went into the hold and tasted it, but found it salt, and as the quantity increased I was now convinced the rocks had made a hole somewhere in her bottom and that she must be inevitably lost. All hands were immediately employed in getting the loose spars over the side under the lee to form a raft, on which we might at daylight save our lives, and provisions enough to subsist on some of the keys until we could get off. Before midnight she again fell on her larboard

⁴ Meins was Robert MacKay's partner.

beam and beat most violently. The gale continued to increase and when the clouds cleared away a little we imagined we could see land not more than a cable's length off. The yawl was hanging over the stern and Mr. Broadfoot and myself had a fifteen gallon cask of water, some bread, a few bottles of wine and porter, a quadrant, compass, spy glass, etc., placed in her and as nothing more could be done before daylight and we felt ourselves much fatigued, I laid down in my stateroom and slept a little. On awaking I found two or three feet water under my berth and the chairs and trunks all afloat in the larboard side of the cabin. I had a small portmanteau which I filled with a change of linen for Broadfoot and myself, placed in it all our letters and papers, the ships papers, etc., and sent it on deck, and having done this he and I climbed to the starboard stateroom which the water had not reached and there slept for half an hour longer. The approach of day was awaited with much anxiety and the intermediate time employed in getting some water and provisions lashed on the deck so as to place them on the raft as soon as we could see. Daylight at length appeared and presented immeasurable horrors to our view. The reef, on the outside of which we were, was more than a mile wide, the sea was rolling over it in tremendous breakers as far as we could see. The land which we had flattered ourselves was so nigh was several broken rocky keys with mangrove bushes on them and the nearest six miles distant. It was now agreed to dispatch the boat in search of a passage through the reef so that the raft might be immediately towed on shore if the gale did not abate. Most of the things Broadfoot and I had put in the boat were taken out, and the mate, four hands and two slaves went away in her. With some difficulty she got through and having reached the nearest key left the two slaves, the keg of water, quadrant, Moore's Navigator⁵ and a compass and a little after 9 o'clock arrived on board. The gale did not moderate at all, it further increased and at 8 o'clock we cut away the mizzen mast, but still it was the opinion of everyone that it would subside at midday. It was therefore determined that the boat should make another trip ashore, leave some of the slaves and return to take away the raft when the weather was better. Supposing this was agreed to, I did not think of leaving the wreck myself, and ordering as many slaves to be put on board as the boat would be safe with, went for my portmanteau intending to send it with them. While I was engaged in getting it from under some things which in the confusion had been thrown with it on the side of the Companion, Mr. Broadfoot came to me and whispered that the people

⁵ *The New Practical Navigator . . . The first American from the thirteenth English Edition of John Hamilton Moore . . . revised by a skilful mathematician [Nathaniel Bowditch]. Newburyport [1799].*

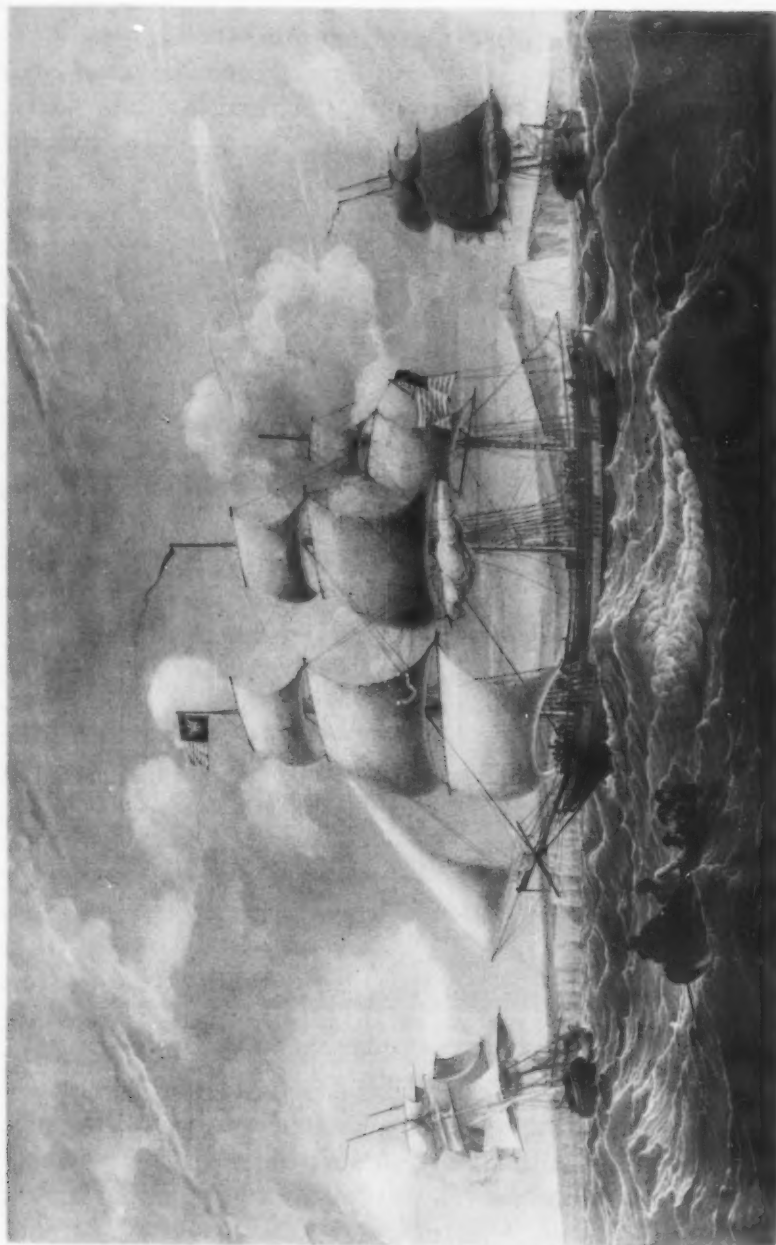
were determined to push off with the boat without the slaves, and added 'if you have any desire to save your life, go now, the boat will never return.' I fortunately took his advice. He and I snatched each of us a blanket which had luckily been brought out of the cabin and without speaking to anybody slipped over the ship's bottom and got on board. My servant, John, was standing on the raft and followed me, Captain Patterson then came on board and we left the ship. During the whole of the night our Captain appeared to have given himself up to despair. He made use of no exertion, took no command upon himself and gave no advice. I spoke to him often, but he gave stupid answers and seemed only concerned for his own safety. He wanted to go ashore in the boat the first trip, but I positively objected and he acquiesced. It is, however, an extraordinary occurrence and worthy of remark that about 2 o'clock in the morning, when death was staring wildly in our faces and nothing but a ship built of the materials and strength of the *General Oglethorpe* could have withstood the sea and rocks she was beating among, the Captain ordered one of the hands into the cabin to take down two handsome looking glasses which were there for fear they should be broken. This wise order was obeyed, and the glasses in a few minutes shared the fate on deck which they were so carefully brought from the cabin to avoid. The Captain, however, proved that he was not entirely deprived of recollection for he brought ashore with him a suit of his best clothes and several changes of linen.

We got through the reef after striking several times and though we expected to find smooth water within were much disappointed for the current setting against the wind made such a short quick sea the boat could scarcely live. When we had left the wreck about 20 minutes, a thick black squall came up and blew so fresh we thought it impossible to reach the shore. However, after three hours hard exertion and when the men were nearly exhausted, we got under the lee of the highest key and a short while after landed. There was now so much sea and the wind so much increased that a possibility of the boat returning to the wreck was entirely precluded. She was now rolling from side to side with every revolution of the breakers, and at dark to our utter astonishment she still held together, but we were all of opinion that the persons left on board must have been washed away or drowned in a very short time after we had left them. As we were ignorant of the spot we were upon and the length of time we might be kept without relief, it was necessary to economize our provisions and water. I immediately took an account of them and found they consisted of:

One keg of water containing 15 Gals.)
 One " " " 2 ") 17 Gals. Water
 22 Bottles of Porter
 14 " of Port and Madeira Wine
 3 " of Brandy and
 1 " of Gin
 3 Bacon Hams
 2 Venison " and about
 20 pounds of bread, half of which was wet with salt
 water in getting it ashore.

To live on this we found our number to be fifteen persons, viz: Capt. Patterson, Mr. Broadfoot, Mr. Putnam the mate, Archibald Atkinson an apprentice, Nicholas Powers, Andrew Wheafer, Robert Wilson, James Fowler, John Broderick, George [], Peter seamen, John my servant, two slaves and myself. The key we were upon afforded no fresh water and only a very few small shellfish, which we found very salty. We therefore limited ourselves to a teacupful of water and an ounce of bread for the 24 hours, a teacup having been by accident put on the boat among the other things. We found the remains of several small wrecks that had been washed ashore on the key, and having collected several large piles in different parts, at dark we set them on fire and kept them up all night in the hope that a wrecker anywhere in the neighborhood might discover us and come to our assistance. I had put in my portmanteau a pair of pistols and gunpowder for the purpose of giving us fire, but these being lost, we were at first fearful that we should be without the power of obtaining it, but luckily Broadfoot had put a small power flask and two flints in his pocket. With the assistance of these, a large knife and a little oakum cut from the end of the boat's pointer, we soon made a light. I had a pocket handkerchief which was converted into tinder and a shell supplied the want of a tinder box. In the evening, having made a large fire among the mangrove bushes, we laid down round it and had just fallen asleep when Broadfoot alarmed us all with the cry of an alligator being among us. We soon discovered this to be the effect of a dream and having got over our fright, which he felt in a stronger degree than any of us, we again composed ourselves to sleep. It blew heavily all night but on the morning of Sunday, the 7th, the wind had abated considerably. Some time before daylight we kept an lookout for the ship, but she was to be seen no more. She had gone to pieces in the night and the only vestige we could discover was the wreck of one of the masts playing among the breakers, the rigging having got entangled among the rocks.

Conceiving the fate of our unfortunate companions now decided be-



Ship General Oglethorpe
Oil painting by Robert Salmon owned by Charles F. Mills



Robert MacKay (1772-1816) of Savannah, Georgia

*Miniature by Edward Greene Malbone
owned by Charles F. Mills*

yond a doubt, we had to deplore the lot of Mr. Joshua Frazer of Charleston, our Second Mate, a young man of good family, a good seaman and possessing the most pleasing manners. With him were ten of the crew and thirteen slaves, making in all twenty-four persons.

Betwixt 7 and 8 o'clock on the morning of the 7th, having embarked our stores and ourselves, we rowed along the south side of our key and two others about the same size, when to our great joy we discovered a schooner standing to the eastward, from under a large key to the southward of us about ten miles. We immediately landed and made a large smoke, and in hopes of attracting their notice hoisted a table cloth (which our bread had been tied in, and which we converted into a sail) by way of flag, she at length tacked toward us and we fondly hoped our endeavours to make her discover us had been successful, but to our disappointment and to our very great mortification after she had weathered a point of reef saw her stand out to sea. At 11 o'clock we took our allowance with a small piece of ham to each and stood to the South for the island the schooner had come from in expectation of meeting with inhabitants. We had to row against a strong current and reached just such another inhospitable spot as the one we had left about four in the afternoon. The place we landed we have since found was the division betwixt Great and Little Abaco and had we have gone to the Eastward should have fallen in with inhabitants or wreckers in a day or two. But unfortunately for us, in crossing the sound we discovered a large body of smoke bearing S.W. of us and conceiving it to be on Abaco we bent our course to the Westward and having coasted along Little Abaco about six miles slept in a little rocky cover where there was not a green bush to lay down upon and absolutely nothing but a bit of sharp rock. Having passed a most uncomfortable and restless night in a dew that felt as heavy as rain, on the morning of Monday the 8th we continued our route for the smoke, having got round the West end of Little Abaco, which we still supposed to be a more Northerly key, we found the water very shoal and it was with a vast deal of trouble we got over it, being obliged, very often to jump over and lighten the boat. We passed several keys to the East of us and at 12 o'clock having taken our allowance we made the land on which the smoke was and highly elated soon expected an end to our difficulties. There was not a breath of air stirring the whole of this day and the sun so powerfully hot that many of the men's faces were blistered. At 3 o'clock we got into a small rocky cover on the Grand Bahama, as it afterward proved, though we then conceived it Great Abaco, but found it so shoal we could not approach within a mile of a landing place. We therefore continued our

route a few miles farther to the Westward, and got into a snug bay with a salt water creek running into it. The smoke appeared to be about six or seven miles off and Capt. Patterson, Mr. Putnam and four others agreed to set out immediately in search of it. We furnished them with two days allowance of bread, ham, two bottles of water and one of Porter, and they left us, both parties in high spirits at the hopes of relief. In the evening we found a brackish pool of water of which we drank heartily, but it was rather too salty to allay our thirst.

Mr. Broadfoot and myself examined our stores, and were sadly mortified to find that some scoundrels among us, with all our care and vigilance, had made shift to use four bottles of wine and two of Porter. We were led to suspect Wilson and Fowler of this theft as they had been boat-keepers the two preceding nights, but with all our exertion could not fix it upon them. However, the strictness observed afterwards and the severe threats thrown out against the thieves should they be discovered, produced good effects as we met with no more losses in this way, but were unlucky enough to break two bottles of wine and one of Porter.

Having made a large fire we laid down to rest with the pleasing hope of good news from our travellers and a speedy end to our sufferings. But the morning of Tuesday the 9th ended our hopes as the travelling party returned with their faces, hands and clothes torn to pieces with their attempts to force their way through the impenetrable brushwood they met with. Capt. Patterson informed us they had gone about two miles along the shore of the creek, when finding it carried them too much to the Westward, they endeavoured to cross the island in a Southerly direction, but having in vain attempted a passage until quite worn out with fatigue they were obliged to return. Some of the people began now to despair of falling in with inhabitants and proposed steering to the Westward that by crossing the Gulf Stream we might in time reach St. Augustine. With a small boat and fifteen persons in it, I was confident of the imminent danger attending the attempt, as well as I was convinced of the certainty of meeting with vessels or inhabitants could we get on the South side of Abaco, and with a great deal of difficulty at length with a strong support from Broadfoot I gained my point and we turned our head to the Eastward. We coasted along the North side of the island and night not producing a place we could land upon we ran the boat among the roots of a mangrove point and then made fast for all night.

Wednesday the 10th, we pursued our way to the Eastward but found the water so shoal were obliged to make a great deal of Northing to get round it. The east end at length appeared when we found it was the

Grand Bahama and not Abaco we had all this time been coasting along, and having come a distance of near sixty miles from the smoke, discovered that we had been within a very short space of the Gulf Stream, a discovery which we were truly fortunate in not making when there, as the men would undoubtedly have persisted in their resolution of going to Florida. This day we had an observation for the first time since we had been in the boat and found our latitude to be 26 40 N. We had a great deal of trouble in getting down the East end from the numerous sand banks we met with, and about 4 o'clock P.M. landed on a small sandy key thickly covered with trees where we remained all night. Here we got some conks,⁶ the first we had seen, a few small crabs and three crayfish, all which came very opportunely for the men were more worn out and exhausted and despaired more than they had done since we left the wreck. Some of them, before we landed, proposed making a hearty meal of what provisions were left and then starve or trust to Providence for more. Wilson was at the head of this—we, however, found means to over-rule his motion. In the course of this day we had several times been deceived with the appearance of a large bird standing on the distant sand banks, mistaking it for a vessel in the offing, of which it had the most exact resemblance, and once we chased it for three or four miles, when having come within a short way of what we thought a small sloop, it took wings and flew away in the shape of an immense large crane.

During the night we had showers of rain with thunder and lightning, and at 6 A.M. of Thursday, the 11th, we left the first hospitable key we had met with. The weather was dark and squally and about seven it came on to blow so hard we were obliged to seek for shelter on another key under our lee where we got ashore when it rained and thundered tremendously. With our tablecloth sail we were enabled to catch about two gallons of water, which we put into our cask and allayed our thirst from wringing our clothes which afforded a very plentiful supply for the day.

If I can accuse myself of low spirits during the time of our sufferings, it was while we were on the first land we made at leaving the wreck when I most sincerely lamented the fate that had deprived twenty-three of my fellow creatures of existence, and a fate I had so narrowly escaped myself—and this morning, standing on a barren rock, with no other shelter from a most tremendous storm than Heaven's Canopy, cold, hungry and

⁶ Mr. William J. Clench, Curator of Mollusks, Museum of Comparative Zoology at Harvard College says 'the "conk" is without question *Strombus gigas* Linne which is very abundant in the Bahamas today and still is a very important item of food there.'

shivering at the appearance of my miserable companions, had the thoughts of home not always been first in my recollection, I should have wished one friendly flash to close the misery I scarcely expected to survive. The afternoon of this day, however, cheered up our spirits. At 3 o'clock the sun made his appearance, the clouds cleared away and we had fine weather. A small shark having got into shallow water on a sand flat near us, three of the men were fortunate enough to take him. This with a few conks furnished us a tolerable meal, and at seven o'clock A.M. on Friday the 12th, though blowing very fresh, we embarked and stood to the Eastward. We had scarcely cleared the point of the key we left when we discovered a brig lying to on the outside of a reef which the sea was breaking over. She appeared to be about three or four miles off to the Westward and we steered directly for her applying all our strength to the oars and hoisting our tablecloth by way of flag, but every exertion was thrown away, for we had just with imminent danger got through the reef when not discovering us she made sail and left us. Thus a second time we had the mortification to be deprived of relief when so near at hand. This had a sensible effect upon our men who despaired now of our being saved in spite of all our endeavours to keep their spirits up. There was too much sea going and the wind had increased so much we thought it imprudent to attempt again to cross the reef and we stood away for the South side of the Grand Bahama, where we found a snug little bay and there spent the day. We also got as many crayfish as we could eat, which was, of course, devoured very voraciously. At 1 o'clock on the morning of Saturday, 13th, we left the bay with good weather and steering about seven leagues. Here we took our daily allowance and having rested until near 12 o'clock continued our route for a large key which we could just discover to the Eastward. This we hoped was the Western part of Abaco and having rowed about six leagues reached it before sundown. As we approached this key there was a large rock at the East end which had exactly the appearance of a house. We could see the door, windows, outhouses, etc., and imagination even painted people walking about the yard. I acknowledge I was never so much deceived before. It was a sad disappointment for after enjoying in anticipation a comfortable supper, we were obliged to sleep away the recollection of being hungry on a miserable sand bank that did not even afford us a shell fish or a single drop of brackish water.

Sunday, 14th. We departed at 2 o'clock in the morning and having doubled the S.W. point of the key found it was not Abaco as we imagined. We therefore continued our course to the Eastward and at daylight could see no land but that we had left. We, however, went on and soon made

several keys on one which we landed at 11 o'clock and found some shell fish, of which we ate heartily and collected some to carry with us. At 1 o'clock we left this key which was the smallest of three that were together, and went to the largest about two miles off. Capt. Patterson, two of the people and myself landed on the North side of this and ordered the boat to meet us on the South side. The day was exceedingly hot and our walk though not more than a mile across the island was a very fatiguing one from the thickness of the brushwood we had to pass through. We tasted an immense number of salt water puddles in hopes of finding a little fresh. This increased our thirst to a degree I had never experienced before. When near the South side, in passing through a little swamp, we discovered naked foot tracks, which appeared to have been recently made. This had a very contrary effect on us from that which Robinson Crusoe felt at a similar discovery on the island of Juan Fernandes. Instead of alarming it inspired us with fresh hope and spirits. It was the first trace we had seen on any of the keys of their ever having been visited by human beings, and we were immediately led to suppose that this must be a resort for wrecking or turtling vessels and consequently a probability of our deliverance near at hand. We pursued our walk out of the swamp and when near the sea shore observed a small beaten track through the bushes. On approaching it our happiness was compleat to find at the end of it a fresh water spring. Those only who have been in similar situations can judge of what we felt at this discovery. To describe the emotions it occasioned is beyond the power of words. Suffice it to say I thought every wish I had was gratified, and I am convinced beyond the possibility of a doubt that I would much sooner and with more satisfaction have resigned my life than the first draught of water I took from the spring. When I had drank as much as I could swallow, I ran to the top of the highest rock and made signs to the boat of our good fortune. The oars were never more vigorously plied. In a short time our companions joined us and I am sure I never saw a happier group. From the East point of the bay we were in, we discovered the Island of Abaco which we were now sure of from its extent, as we knew there was no key so large on the whole bank except the Grand Bahama, which we had left. The shell fish which we brought from the last key we here cut up into small pieces and boiled in fresh water by way of soup, which having made a hearty supper of we laid down round our fire as usual and had a comfortable nights rest. In the morning we left a memorandum of our having been at the spring, in a bottle, and at three o'clock steered for Abaco which was about seven leagues off. There we arrived at 12 o'clock on Monday the 15th and procured a meal of crayfish. Here we

slept and at 1 O'clock A.M., Tuesday 16th, set out and coasted along the South side of Abaco. At 11 o'clock having come about ten leagues, we landed on a small point and having found a supply of conks sat down with them to our usual allowance of water and pittance of mouldy bread. Before one o'clock as we were embarking to pursue our route for the Hole in the Wall on the fourth point of Abaco, from which we judged ourselves about 20 miles, Jack Broderick discovered a sail to the Westward. We were at first of opinion that it was one of the large cranes which had deceived us before, but recollecting there were no sand banks in that direction for these birds to alight on, it was decided that we should make for the sail. To cheer up the men and give them strength for a hearty pull at the oar, a bottle of wine was divided among them. It happened, fortunately, to be perfectly calm, and in three hours we were alongside the Schooner *Ranger* of Charleston, Thomas Bennett, Master, owned by Messrs. Alex and John McChire, from Havana bound to New Providence. From Capt. B. we received the greatest hospitality and attention who, on our approaching his vessel, observing the length of our beards and lank appearance of our visages, immediately imagined we had been starving for some time, and to prevent our being injured by indulging too freely our appetites at first, he had everything eatable put out of sight and delivered us small quantities at a time and often. We found Capt. Bennett had not more than ten gallons of water on board, but we fell in with a brig the next morning, the captain of which supplied with a sufficiency to carry us to Nassau, where we arrived at sundown on Wednesday, the 17th February. From our friends in Nassau, Broadfoot and myself received the most marked attention and after a few days care and good living felt tolerably recruited.

Before we reached the shore after leaving the wreck of the *General Oglethorpe*, the gale had increased so much we were unanimously of opinion that the persons must have perished who were left on board. It however happened otherwise for a wrecker some days after found five of them on two keys a few miles from where we landed, and two of them having arrived at Nassau on the 1st March they gave me the following account—The gale was so severe they soon saw the impossibility of the boat's return and determined to remain with the wreck as long as she would hold together in preference to trusting to the raft which they thought could not get through the reef, and when the ship began to roll from side to side they lashed themselves in the chains with the ends of the lanyards which were left hanging in the Dead-Eyes when the masts were out away. In this situation they were when they saw the slaves drown without a possibility

of assisting them and one of the men, soon after having got his arm broke in the chains, was also drowned. The forecastle parted as they supposed about 1 o'clock in the morning and floated away and soon after the starboard side of the deck lifted up from the timbers. When the stump of the mainmast also went adrift, Mr. Frazer, the 2nd mate, Bob Davis an apprentice, and Green got on the mast and when it was about 20 yards from the ship the cook, who was an excellent swimmer, attempted to reach it, but was drowned in a breaker and in a very short time the others were seen to perish. When this happened the remaining five were hanging to the starboard quarter gallery which still stood upright, though the upper deck was then gone; and the after part of the lower deck separating they got on it and having drifted about on it for 24 hours at last landed on Carter's Key a few miles to leeward of where we were cast away. The wreckers informed them the Key we were first on was Fish Key. They were seventeen days before they were taken off, but had been supporting by eating shell fish, the Seven Year Apple which they found in abundance, and got some water from the Wild Pine⁷ of which they also ate the root or stock and found it to allay their thirst. Many pieces of the wreck drifted on shore while they remained and among other things a barrel of pork. They suffered most for want of fire and clothing as the nights were very cold and the sun exceedingly hot.

Their finding water in the Wild Pine was a most remarkable instance of the bounty of Providence, for without this little supply they must have perished. I take notice of this because on every key we landed I examined the Wild Pine and invariably found them dry.

⁷ Mr. Clench thinks the "wild pine" refers to a wild pineapple. This was common in the West Indies and was first noted by Columbus in 1493 on the island of Guadaloupe. The pineapple during the eighteen hundreds was a very important commercial product in the Bahamas and had probably been imported long before 1800 into the islands if it actually didn't occur there in a wild state prior to that date. In *Sturtevant's Notes on Edible Plants*, he mentions its readiness to run wild from cultivated seed plants. It is the only fruit that would serve as a source of water. Wherever they grow they are referred to as "pines" and the Spanish word is just *piña*. This is the only logical answer to the reference of "wild pine." This certainly could not refer to the Bahama Pine, a long-leaved pine tree that occurs only on Andros, Grand Bahama, the Abacos and New Providence Islands. All of the remaining islands in the Bahamas are without this tree.



Present-Day Craft and Rigs of the Mediterranean

PART II

BY LIEUTENANT (J. G.) T. C. GILLMER, U.S.N.

III

ACROSS Italy in the Adriatic there is found a diversity of natural conditions that has for ages influenced the design and rig of the craft. As has been pointed out, in the Mediterranean proper the lateen is universal and all rigs that include it have their ancestry rooted there. However the converse is not true, as is shown in such craft as the *Navicello* in which the lateen has been discarded. In the Adriatic the lateen was abandoned, or modified when fore-and-aft sails first began to be used, so that the universal rig was for centuries and is today the lugsail. The lug rig though less responsive to light winds and slower generally is far more to be desired in squally weather and the temperamental gales common in the Adriatic.⁷ Through centuries of experience the native sailors have found the lug with its many varied forms is more manageable.

The *Bragozzi* (Fig. 18) is one of the more predominant types and probably most familiar to the stranger's eye, since it is found chiefly in and about Venice. For hundreds of years artists have worked to capture Venice, her Grand Canal, her spire of Saint Mark's and Palace of the Doges. In the foreground of these pictures can usually be found the painter's conception of a *Bragozzi*. The gaily painted sails are details that add color to the picture, but for purposes of discussion here the rig will be examined from a more technical standpoint. Very simply, it consists of but two lugsails, the after one much larger than the fore. To our Western eyes the *Bragozzi* might easily be taken for a ketch or yawl in reverse. The hull is heavily built with great beam and little free-board. The bluff bows and heavy stern with a high projecting and heavy rudder give her much the appearance of a slow moving barge. However beneath the water she is of shallow draft with a rather flat bottom and slight draft for-

⁷ The *bora*, heavy westerly gale and the *siffante*, southwester, together with sudden wind-shifts and following squalls of extreme violence produce more conservative sailors in the Adriatic.

ward, which accounts for the sail area being concentrated well aft and the diminutive sail forward. There is little question about the sailing qualities of the *Bragozzi* after one has observed them scudding about the con-



Fig. 18. *Bragozzi*, Adriatic (Venice)



Fig. 19. *Topo*, Adriatic (Venice)

finer waters of the lagoon, for their heavily laden hulls move with a remarkable agility.

The *Topo* (Fig. 19) is another craft common in this vicinity. It is small and considerably lighter in construction than the *Bragozzi*. There is but

one mast having a tall and well-cut lugsail. The hull is shallow and the underbody slopes up to an overhanging bow making for less difficulty upon grounding. This form of bow is common about Venetian waters and is found to be in great favor in even the very small types.

A little to the south toward Ancona the Adriatic sailors have developed a fine type called the *Trabacola* (Fig. 20). She is undoubtedly the finest example of lug rig in this sea of lugsails. The rig is a combination of the two standard types. The fore carries the dipping lug and is slightly greater in area but not as highly peaked as the main. The standing lug on the main is a much more beautifully cut sail and is peaked high, with a rising foot and lifting yard: giving the impression of lightness. This sail also carries an odd feature of antique usage. The fore part or head of the sail is trimmed by means of a crowsfoot and bowline. Since the sail is not dipped when going to windward these prevent it from fouling against the mast, and keep it flat. A single large jib is bent from the head of the fore to a lofty bowsprit. The hull of the *Trabacola* is notable primarily for its bold and curving sheer line. The bowsprit is steeved up high continuing the arc of sheer to the very limit. The body is graceful and full, with a

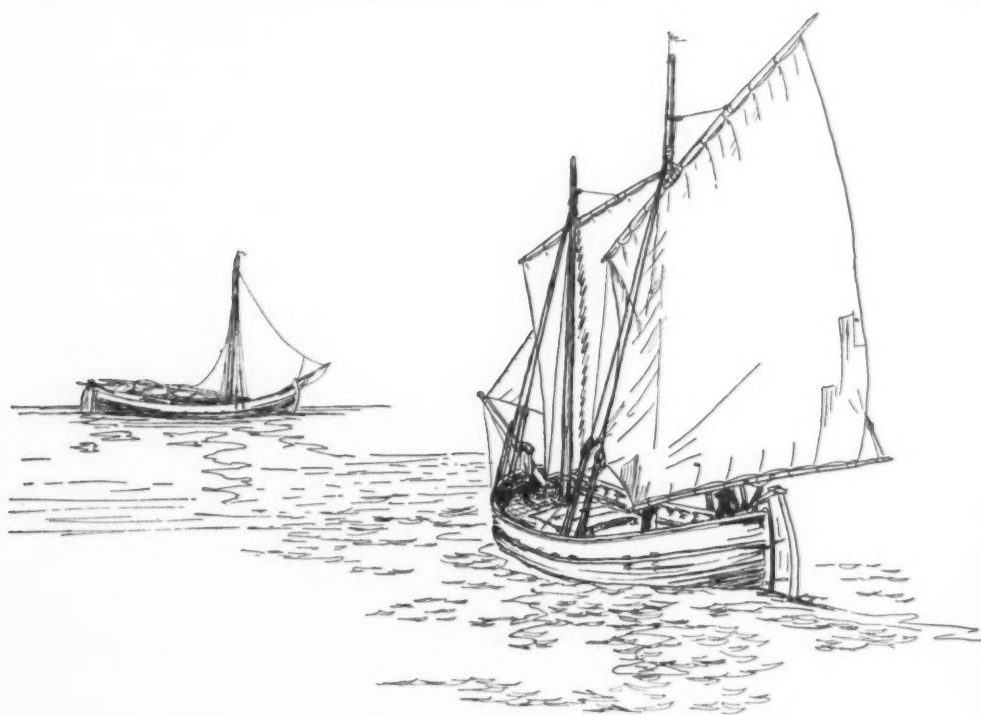


Fig. 20. *Ancona Lugger* (left). *Trabacola* (foreground). Adriatic

rather flat rise on the bottom. The rudder is heavy and deep in the usual Adriatic fashion.

Except perhaps for minor changes in cut of the two lugsails it is remarkable to note how little change has taken place in one hundred and twenty years. A comparison may be had from Antoine Roux's aquarelle (Plate 10 of Vol. I, no. 4) and Figure 20.

A smaller type (Fig. 20) common in this vicinity is very similar to the *Trabacola*. She is of about thirty feet in length compared to the *Trabacola's* length of forty to fifty feet but differs only in rig. She carries but a single mast with standing lug exactly like her larger sister. The jib is if anything slightly larger in proportion.

Both of these boats venture far from home being seen frequently in Greek ports and on the western coast of Italy and often farther. Their efficient combination of rig and hull leaves no fear in the minds of their sailors.

Back to the Mediterranean proper we find in Malta an odd assortment. Like the people and the language there seems to be a blending of many races in the boats. No attempt will be made to identify the great number of craft because in their mixture they seem to lose distinction, becoming an impure caste. The theory has been advanced here however, concerning the ever-present stem prolongation of Mediterranean boats. The



Fig. 21. *Taffarel*, Malta

'rota,' as it is called, is larger and longer in proportion to these small boats than on any other craft of the Midland Sea. From the Latin name it is apparent that the form of construction is ancient. Whether it signifies the wheel or circular form of the entire stem from top to keel — because the form today is still nearly a perfect quarter-circle, or whether it is derived from the scroll that was turned on the stems of old Roman craft is debatable.

There is one other point that is interesting to note in the rigs of these Maltese craft. The sail that is still common is not the lateen but the oldest form of spritsail. The question of heritage here again becomes more or less two-sided. The spritsail may have been used in ancient times although there is little actual evidence to support the supposition other than two models of Greek galleys by Admiral Serre in the Louvre. In these models however the sail is of exactly the same type as found in the present *Taffarel* (Fig. 20) of Malta. The spritsail on the other hand, in its relation to the fore-and-aft rig, is a product of northern Europe. It sired the present-day fore-and-aft rigs with the assistance of the Mediterranean lateen but is out-dated by the lateen by some four centuries. It is more reasonable to suppose that this rig was adopted in Malta at a comparatively recent date and is one of the few cases of the Mediterranean showing any Northern influence. The same craft as depicted by Antoine Roux in 1826 shows little change (Plate 12).

It would be a great injustice to the Maltese *Taffarel* however to draw all attention to her misleading rig. The exact age of her other features is equally hard to ascertain. She could aptly be classed as a more extreme model of typical Mediterranean. She has of course the Mediterranean double-ended hull with a little heavier bow than is common on others. The bold sweep of sheer is very similar to that of the *Trabacola*. The stern-post rises higher than those of French and Italian craft. Where the stern-post usually is cut off near the deck to accommodate the tiller, here we find the tiller accommodating the stern-post. It drops from the rudder head that rises even higher above, having sloped inboard with a gentle curve. The stem head however overshadows all other points on the line of the hull. Rising high and curving back it becomes heavier at the top so that the general appearance is that of an immense Turkish scimitar. On top of this stem head rests the inevitable crescent form more unmistakable than on any other. It rests here seeming to mock the cross of Malta. But as was said above, Malta is a place of mixtures. Crosses and crescents, Roman letters for Arabic words, western people with eastern habits — it is little wonder that the craft on the water are of multiple origins.

Down along the coast of Tunis there sails a boat that distinguishes the native sailor and makes him outstanding along the northern African coast. Of all the craft that sail out from these one-time Barbary seaports there is but one left along the whole coast to reflect their former sea power or to point out any influence other than those of existing Mediter-



Fig. 22. Tunisian Fishing Lateener

anean Powers. The boats of Tangiers, Oran, Algiers are the boats of France and Spain and Italy. There are few native sailors left and none carry on traditions with the possible exceptions of the Tunisians. The entire stretch of coast from Morocco to Tripoli has no individual characteristics in maritime craft, but the rig existing in Tunis is by far the most unaltered by time of all moderately large craft of the Mediterranean western basin. Here is found a two-masted lateener of such arrangement that if she were of the conventional fore-and-aft cut she might be called ketchrigged⁸ (Fig. 22). Both sails are pure lateen of the oldest type. The

⁸ The native name for this lateener is like those of a few other Mediterranean craft, contradictory. The native sailors very often call their craft by the local word for 'boat.' Sometimes two, three and even four names are applied to one type — as often as not they are erroneously used and refer to an entirely different and distinct type of another locality. Mediterranean craft are also given names that are distinctive of hull and rig together. Often only the hull form and construction determines the type and name. The vessel's employment is often a factor found in such names as the old Italian *Bovo* or the French *Bateau Bocuf*. In the case of this Tunisian lateener the most suitable of all its various names probably is *Laoutello* from its nearest ancestor. In the foregoing pages where similar inconsistencies were present to an even greater degree no local appellation was mentioned but rather the most common English interpretation, i.e., *Tuscan Coaster*.

mainsail is about twice the area of the after sail although both combine ample drive for the size of the hull, being of greater proportions than the similar rig of the *Tartane* of two centuries ago. The rigging conforms with the older traditions: running shrouds with a lack of any standing rigging. There are no topsails but a single jib on a long, horizontal, semi-fixed bowsprit. The hull is singular among all other Mediterranean craft in having a transom stern. She is wide and deep with little freeboard, cut sharply away under the counter. The water-line forward although not sharp, is not bluff either, but more of the 'cods-head-mackerel-tail' combination. She is all around a handy, swift sailing craft, moving freely in and out of the Tunisian Canal under no other power than sail.

In order to draw together any loose ends that may have been lost in the details of the various craft, the following points should be made clear.

In all the difference of rig and hull in the craft of the Western Mediterranean, we have noticed many characteristics common to all. The high projecting stem and cap, double-ended hulls, beach craft identical in hull to larger craft in the same vicinity — all occur repeatedly. The vast majority of craft are double-ended with varying sheer, differing slightly in heights of stern and bow or rake of stem- and stern-post. The projecting stem is a common and ancient feature but is noticeably absent on such distinctive craft as the *Tartane* and *Navicello*.

The *Tartane* embodies an even older feature on her stem than the projection. The curved head-piece which normally would be termed clipper bow can be traced fairly consistently back to the old war beak-head and without too much imagination to the ancient ram. The war galleys of Genoa and Venice undoubtedly inherited the ram from the ancients; they at least adopted it to a good purpose. However instead of being on the water-line or below they raised it slightly above giving a long knife-like appearance to the bow. Later, this beak-head became more ornamental and was adopted by small peaceful trading vessels, apparently for the same purpose as the merchant ships of a century ago which used white stripes about the hull broken by false gun ports. In this period the *Tartane* began to develop as a distinctive craft and the beak-head came with it. Lifting still higher this beak was highly ornamental but of doubtful purpose. An excellent idea of it can be formed from Chapman's drawing of a seventeenth-century *Tartane*. The stem was almost a perfect arc of a circle, beginning at the keel and extending high above the gunwale. The beak projected out from it at about the deck line. Shortly after, the jib was added and necessarily a short bowsprit beyond the headpiece.

The single-masted *Tartane* at the close of the eighteenth century was perhaps the acme of development of this type of boat. The *Tartane* of to-



Fig. 23. False beak-head on small beach craft.
French Provincial Coast

day has undergone changes that did not add to her beauty or flavor but she still retains sufficient of her parent design to be not very far removed. It is not difficult, when gazing upon a *Tartane*, to feel the proximity of ancient galley and Saracen pirates. This combination of projecting stem and beak-head which has not been seen for over a century on any craft of the size of the *Tartane* is still in evidence, though very rare, on some small harbor and beach craft (Fig. 23). There are perhaps some two or three such boats along the French Riviera.

They are of the larger type of beach craft used by the fishermen and carry the unmistakable beak with no apparent purpose. The *Speronara* of Malta which is practically obsolete and a similar small Maltese harbor boat evidence the same peculiarity. That this characteristic is found on such small craft after so many years is indeed indicative of its past impressiveness.

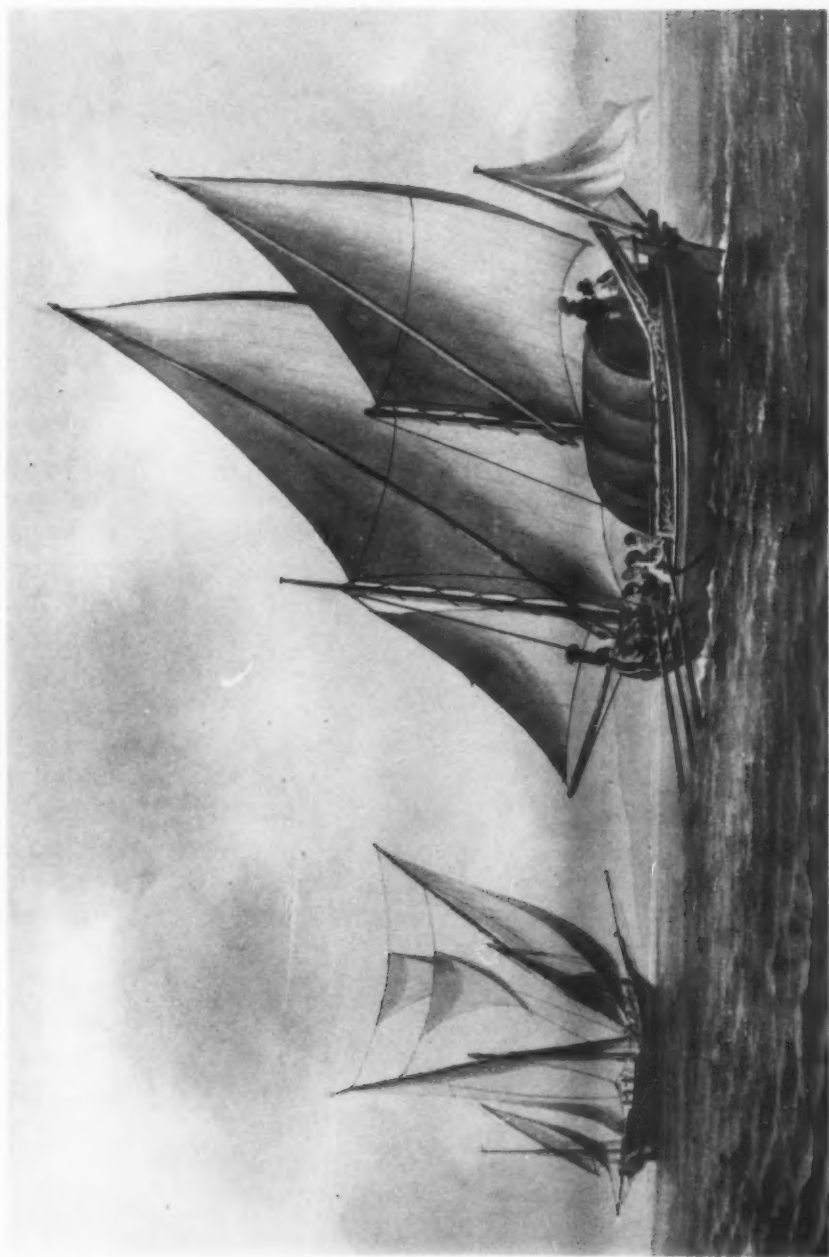
In regarding the rigs we have noted the presence of the lugsail and spritsail where there seemingly should have been lateen. It has been so stressed that the lateen is the mark of Mediterranean craft that the reasons for the presence of these others may be a trifle elusive. The spritsail of Malta has been noted in its relation to others of its kind in the past and seems to be an extremely old usage.⁹ Whether the sail of the *Navicello* can be called sprit or whether it is simply a loose-footed gaff sail it results nevertheless from doing away with the forward part of the original lateen. The lugsail in the Mediterranean may, with little stretch of the imagination, be considered a modified lateen for handier use in squally weather. However in these varied forms it is difficult to relate the pure lateen. We

⁹ There is former evidence of more extensive use on the French coast in the eighteenth century of the sprit rig, very similar to the present Maltese rig. An excellent example of the type is preserved among Antoine Roux's sketches (Plate 11) showing a sailing 'ferry' under oars in addition a nicely balanced spritsail arrangement. The then common *Pinque* is seen in the background.

know that this 'sail of the Latins' began to show itself on the sea about the time when the crescent of the Turks and Saracens more than half enveloped the Mediterranean. But there is evidence of its usage earlier in the Red Sea and on the Nile. The lugsail was known even earlier among the Arabians when the Greeks and Phoenicians were carried about under square canvas. Nevertheless the Mediterranean can distinguish itself as the cradle in which these slanted sails developed, flourished and still exist.

Of all the many hulls and rigs of the Mediterranean only a few have been described. These few that survive are outstanding because of their ancient turn. There are others with similar characteristics altered by their owners for some reason or another. There are still others such as the lateeners plying freight on the canal between Leghorn and Pisa or the boats of the northern Italian Lakes where a line must be drawn to distinguish the proper Mediterranean craft. There were those that flourished and perhaps outshone the craft described, as recently as fifty years ago, such as the *Bateau Boeuf*, the old *Marsilian* and the great and varied number of lateeners of southern Italy or the boats of the Catalan coast. Those have all passed from the picture and we are left with the predominant boats distinctive of another time but still present-day craft.

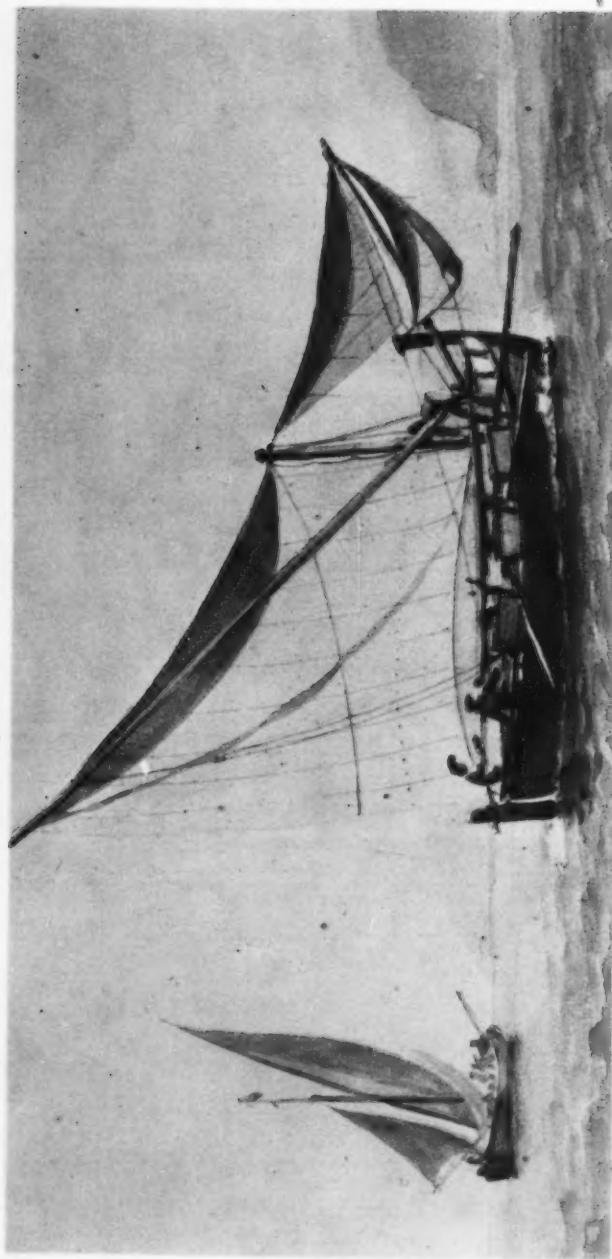
Although, as described, these odd craft would seem ancient and unchanging, they are subject to continual evolution, and as described here they are of the present with a brief attempt to trace their past. Their change toward the future will undoubtedly be toward diminishing numbers but fortunately, because of the unaltered methods and mode of life of their sailors, the lack of wealth and reluctance to accept the modern, they will always keep a strain of their ancient birthright.



Sprit rig on the French Mediterranean coast, with a *Pinque* in the left background

From a sketch book of Antoine Roux, 1816, page 25, in Peabody Museum of Salem

Note the decorated stern boards — a contemporary custom on many types of craft of this size



Maltese Taffarel of 1826

From sketch book No. 65 of Antoine Roux, 1828, page 6, in Peabody Museum of Salem

A Jury Rudder for the Bark Guy C. Goss

BY LINCOLN COLCORD

Penobscot Marine Museum

A REMARKABLE jury rudder case has just come to light on the Maine coast, involving questions of ship design, construction and steering qualities which cannot fail to be of interest to students of naval architecture. The incident happened on board the Bath-built bark *Guy C. Goss*, Captain Walter H. Mallett¹ of Topsham, Maine, master, and has never before been recorded. Captain Mallett died 8 August 1931, at the age of seventy-two; but it happens that his widow, who accompanied him almost constantly on the sea and was present during the incident in question, is living in Topsham in her eighty-third year, and has been able to furnish me with photographs and a first-hand account of the whole operation. It also happens that Mrs. Mallett obviously is a seaman in her own right, as quotations from her letters will show. The story in detail affords a perfect example of the natural human efficiency developed in the heyday of the American sailing ship era.

The bark *Guy C. Goss*, of 1,572 tons, built by Goss & Sawyer in Bath, Maine, and launched 27 November 1879, was the thirteenth vessel put afloat at that yard since the previous January, and the one hundredth vessel built by them under the partnership established after the Civil War. She was the largest bark-rigged wooden vessel ever admitted to American registry, a beautiful craft with double topgallant-yards and a main skysail. Her accommodations in the after cabin were the finest product of the Maine cabin builder's art, panelled with choice hardwood, spacious and

¹ Captain Mallett was born in 1859. His first command was the ship *Henry Failing* in 1884. He took the ship from San Francisco to Liverpool for Captain Merriman, who took a vacation. He returned to San Francisco as first mate, and then took the bark *W. W. Crapo* to Liverpool and then to Philadelphia. Captain and Mrs. Mallett were married in May 1886, and in the same year W. H. Besse of New Bedford gave him command of the old ship *Syren*. He commanded her for two years, and was then promoted to the *Guy C. Goss*, which he commanded until 1900. From 1901 to 1910 he was master of the *Hawaiian Isles* (now the Swedish bark *Abraham Rydberg*), and from 1911 to 1917 of the Sewalls' *Dirigo*. He then retired at the age of fifty-eight. Two photographs of Captain Mallett are reproduced by Mark W. Hennessy, *Sewall Ships of Steel* (Bath, 1937), pp. 484, 642. Mrs. Mallett accompanied him on most of his voyages, and has rounded Cape Horn twenty-eight times.

comfortable. In these quarters Captain and Mrs. Mallett lived during the thirteen years in which he commanded the vessel, from 1888 to 1901.

The *Guy C. Goss* had a sea-going career of forty-seven years, most of it spent in hard service. She was built with oak frames and hackmatack knees, planked with yellow pine, iron and copper fastened, as were all the wooden vessels constructed on the Maine coast, during this era. Her dimensions were: length 213.8 feet, breadth 39.8 feet, depth 24 feet. The *Goss* was owned and managed in Bath until 1900, during which time she was the first vessel to bring several cargoes of Oregon timber around the Horn to the Atlantic coast of the United States. In 1900 she was sold on the Pacific coast, changing hands frequently and serving as a 'salmon packer' between Seattle and Alaska for twenty years. In 1925 she was sent to Auckland, New Zealand, with a cargo of lumber, and there was libelled for debt. Later she was sold at auction by order of the court, and bid in for the sum of £308. It is likely that she is still serving as a coal hulk in the harbor of Auckland.

The accident to the rudder of the *Goss*, which furnishes the occasion for this article, took place off Cape Horn on 7 March 1900, on a passage from Puget Sound to Philadelphia loaded with timber. The vessel had passed Cape Horn the previous day and was running before a westerly gale, when her rudder carried away. But the incident itself had best be told by Mrs. Mallet's letter of recent date, which I present in full for its succinct flavor.

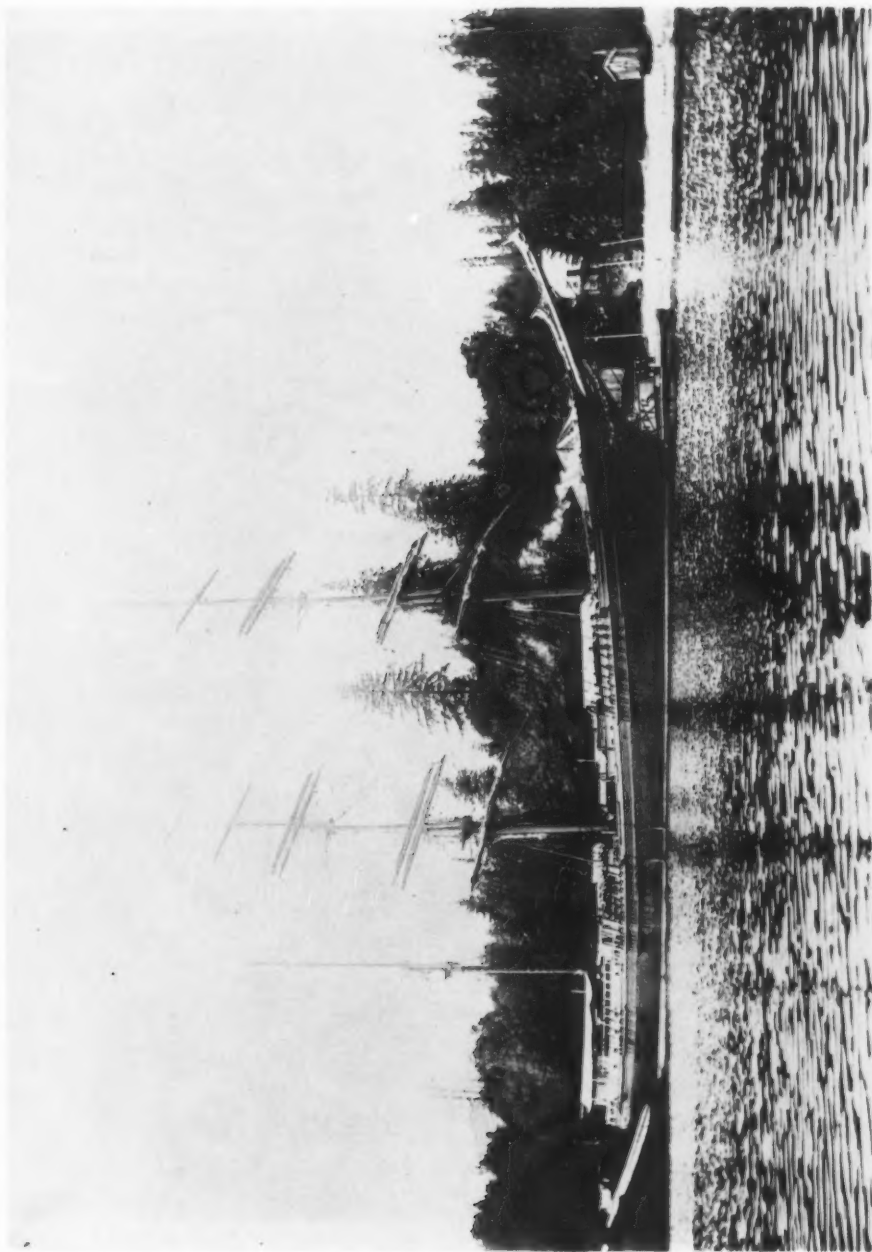
Topsham, Maine,
4 April 1941.

Dear Mr. Colcord:

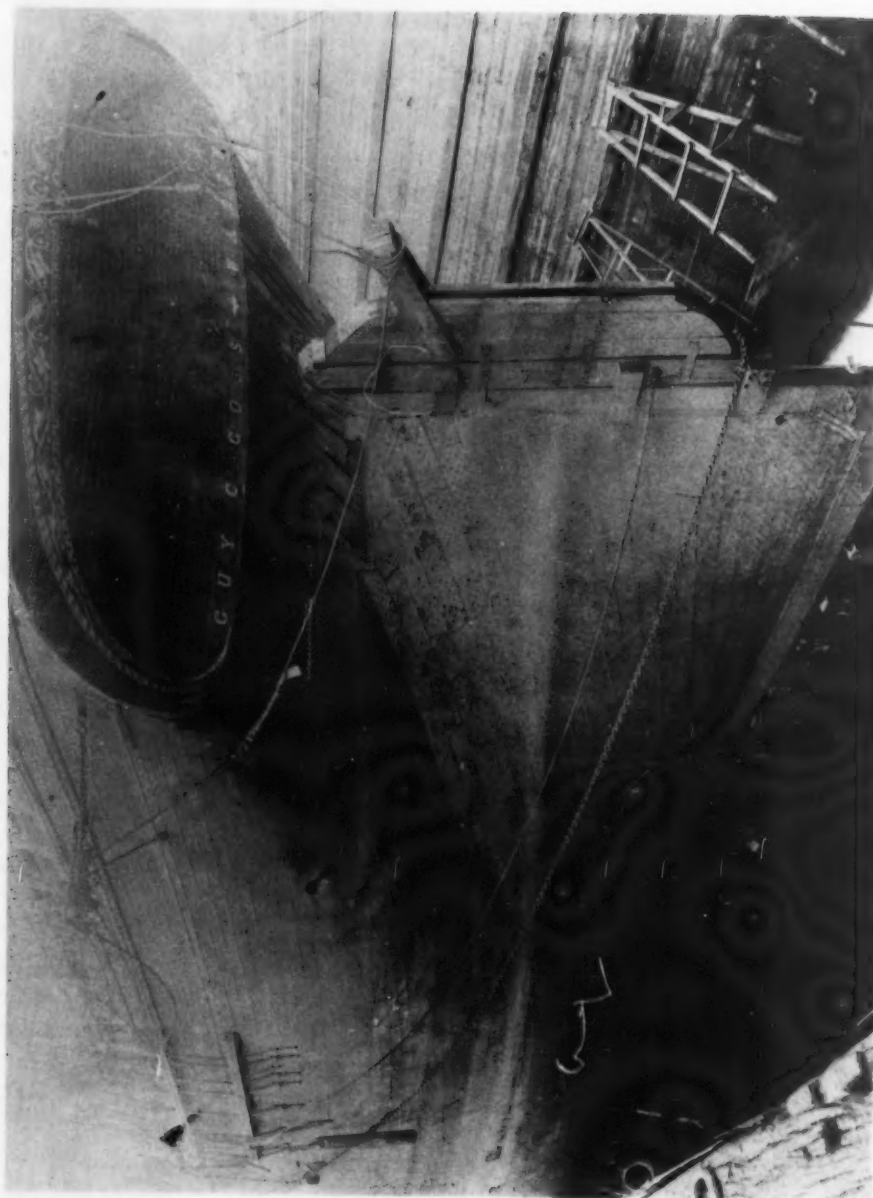
Owing to illness I was unable to answer your letter before today. Will give you the incidents of the rudder accident as I remember them.

We had just rounded Staten Land, or passed it, rather, during a westerly gale and clear weather. We were at dinner when the bark suddenly came up into the wind, almost aback. A dreadful flapping of sails. Captain soon found the ship did not answer the helm, and on looking over the stern found the rudder braces torn away from the rudder post. The thumping at rudder head was dreadful. Captain tried to see if anything could be done in way of repairs, but found it hopeless. So sawed rudder head off and let rudder sink, which it immediately proceeded to do.

The ship was loaded with Douglas fir from Vancouver, so there was lumber sufficient to build a new rudder. The *Goss* was a very hard 'steerer' as ships go, and Walter thought a shorter rudder would do the work better than the old one. So he proceeded to plan the rudder, fifteen feet long instead of the twenty of the old one. They made rudder braces from the lining of after hatch combings. Captain had a



Bark Guy C. Goss
Reproduced from a photograph by Captain Walter M. Mallett



Stern of bark *Guy C. Goss* in dry dock at Philadelphia, 1900,
showing jury rudder rigged off Cape Horn

Reproduced from a photograph by Captain Walter M. Mallett

good carpenter but a useless mate. It was wonderful to see the interest and helpfulness of the crew.

They were eight days building the rudder. It was very hard weather, wind every way and ship unable to do a thing but keep up to the wind, at times, with the help of staysails, spanker, etc. On the eighth day the weather was fine for the purpose of launching the rudder, and believe me there was a lively crew, all hands busy until it was finished. If Captain Mallett had not been an excellent mechanic, you can see we would have left the poor old *Goss* and been taken off by some steamer.

We made an excellent trip of about a hundred and thirty days from Flattery. The new rudder proved far better than the original. The ship could make better time, and when Captain had the new permanent rudder made, it was much smaller than the original one.

I wonder if this is what you wanted to know.

Very sincerely yours,

KATHERINE MALLET

The reader will recognize that it is exactly what we wanted to know. In fact, this letter bears the most careful analysis in terms of seamanship; it could only have been written by one seaman to another. Who but a seaman, for instance, would have felt it in order to put in that 'Captain had a good carpenter but a useless mate?' This tells the story of daily operations as no other information could do.

The excellent photographs [Plates I-IV] of the jury rudder constructed by Captain Mallett which we are able to present, almost tell their own story; yet a few comments are in order. There were two types of jury rudder possible of construction at sea; they were fundamentally different, and both were well known to capable seamen. The choice between them depended on judgment, weather conditions, and other factors in the working scene.

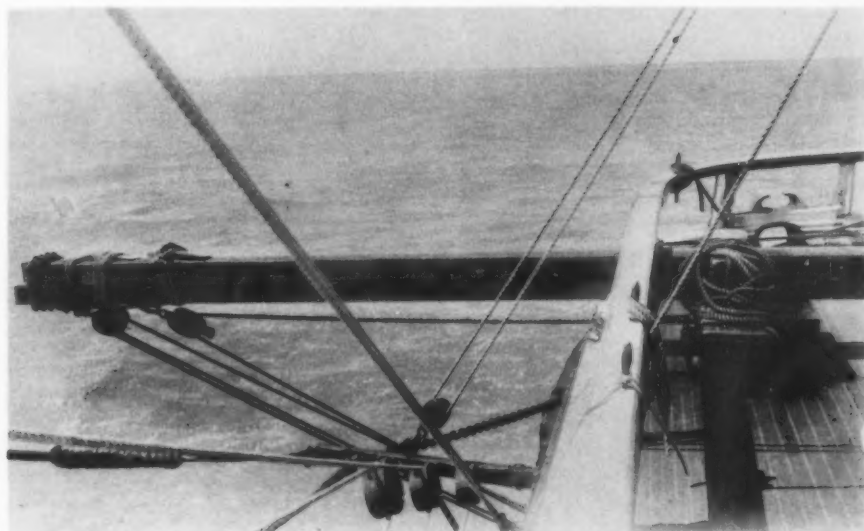
The first type was a duplicate of the original rudder of the vessel. This had a rudder post, its own pintals, and was to hang on the stern-post of the vessel. Unless the materials for pintals were available, it was useless. Furthermore, to hang it was a delicate operation requiring relatively smooth water. The rudder post had to be inserted in the rudder well, with the jury rudder vertical in the water, and after that the pintals had to be shipped in the gudgeons; assuming, meanwhile, that the original gudgeons were uninjured. The whole operation was one to be performed in a quiet harbor rather than at sea. The advantages, of course, were considerable. With a rudder post extending through the well to the deck, a tiller could be fixed to it and the steering mechanism could be arranged on deck rather than outboard.

The second type, the one usually attempted at sea, was another matter. This is the type constructed by Captain Mallett, and he seems to have succeeded in making a genuine contribution to the art, as the photographs show. This type involved the construction, on deck, of a complete rudder and a false stern-post. These could be joined together, on deck, by the necessary mechanism to make the rudder work on the post; as Mrs. Mallett writes, this was done in the case of the *Goss* by using the iron strapping from the mizzen hatch combing. The head of the false stern-post became a dummy rudder post and was inserted in the rudder well, thus fixing the head of the rudder. But the absolutely important item, in this type, were the three sets of flanging cleats, like spread fingers, along the false stern-post, which served to fix this to the true stern-post. These will be clearly seen in the photographs.

With this affair constructed on deck, the launching of it would be a matter of trial and error. Chains were attached to the bottom of the false stern-post, leading forward under either counter. Lines would be fixed to the top of the rudder, to hold it in place. The whole thing would be launched over the stern, and the dummy rudder post would be inserted in the rudder well. This would fix the top of the rudder, the upper flanges of the false stern-post necessarily falling into place around the true stern-post at the same time. Then the fixing of the lower flanges of the false stern-post would have to wait on a proper swirl of the sea under the stern, when the chains would be hauled taut forward and everything would be fixed solid.

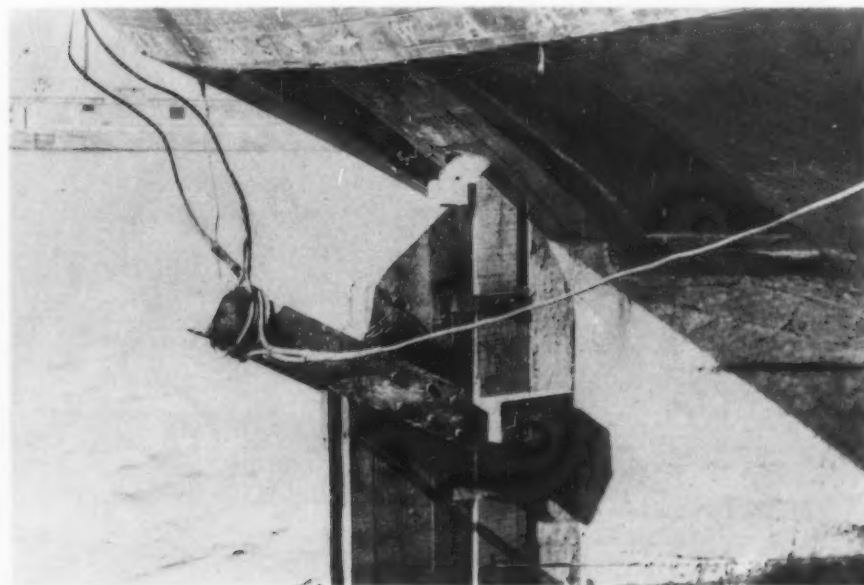
But now the question of using this rudder comes forward. The rudder of the first type could be steered from the deck; this type of rudder had to be steered from overside. A tiller was provided on the blade of the rudder, projecting aft; two long bumkins were projected from either quarter of the vessel. Wire ropes attached to the tiller led to the port and starboard ends of these bumkins, and tackles were led in from these bumkins to the steering gear of the vessel. Thus, when the jury rig was successfully established, as it was in this case, the steering of the ship was done in an ordinary fashion by a man at the wheel.

The fact that, after eight days of threshing around in Cape Horn gales without a rudder, the *Guy C. Goss* was fitted with a jury rudder and completed her voyage successfully in 117 days from Cape Flattery to the Capes of Delaware is no slight testimonial to Captain Mallett's efficiency. Under ordinary conditions this would have been an excellent passage. Mrs. Mallett's recollection as to the length of the passage is in error, as the fol-



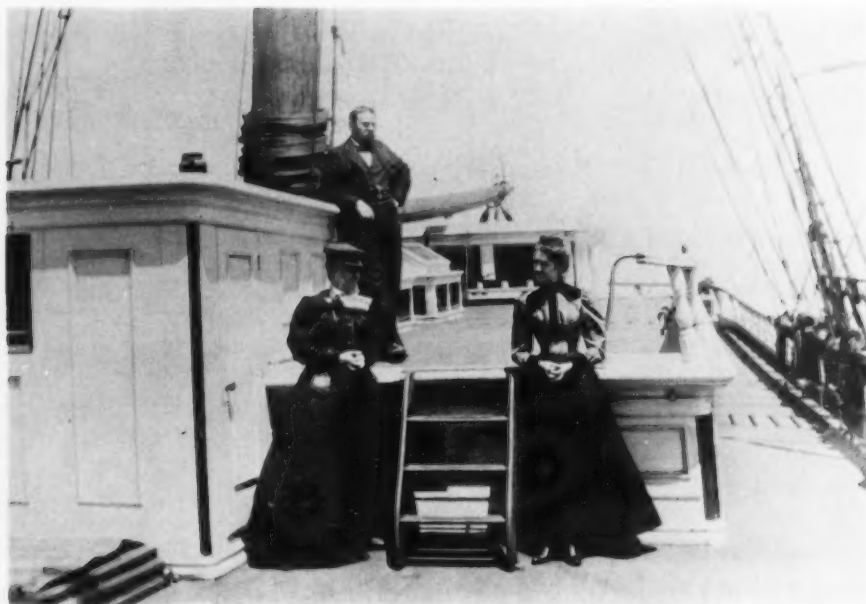
Bark *Guy C. Goss*—starboard jury timber bumkin from which tackle was led inboard to the steering gear of the vessel

Iron bumkin in foreground is a permanent part of the vessel's rigging. The main brace and main topsail braces led down to it. The line running diagonally upward to the right from the iron bumkin is the vang of the standing gaff.

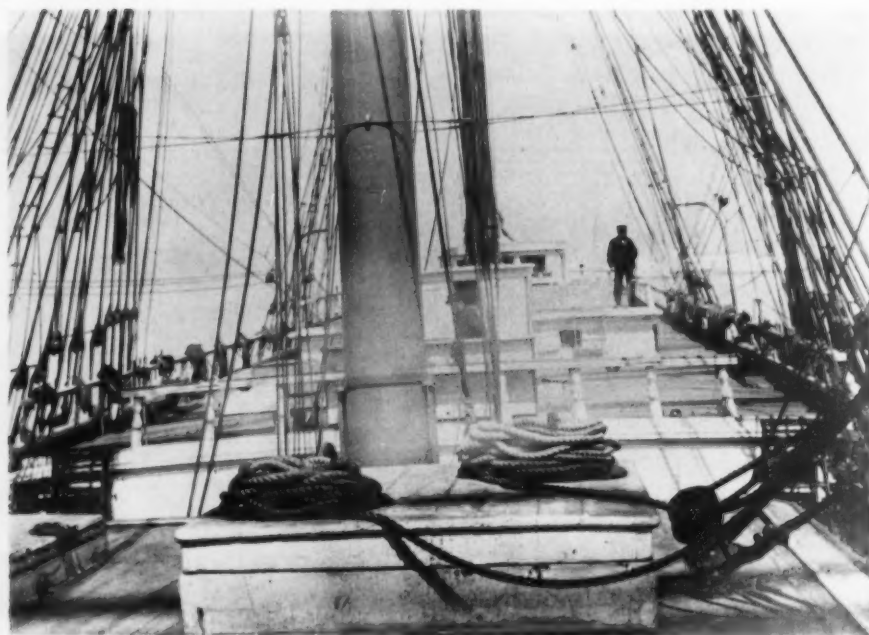


Detail of stern of bark *Guy C. Goss* (unloaded, with stern ports open) before being placed in dry dock at Philadelphia, 1900, showing the strength of cleats and tiller

Reproduced from photographs by Captain Walter M. Mallett



Captain and Mrs. Walter M. Mallett and a friend on port side
of after house of bark *Guy C. Goss*



Looking aft from end of forward house of bark *Guy C. Goss* —
main hatch in foreground

Reproduced from photographs by Captain Walter M. Mallett

lowing letter from Captain Mallett to his owners, taken from his letter book, will show.

Western Commercial Co.,
20 California St., San Francisco, Cal.

Bark *Guy C. Goss*,
Philadelphia, Pa.
26 May 1900.

Dear Sirs:

We anchored here about noon yesterday. Had 117 days passage to the Capes of Delaware.

I wired you of our arrival under jury rudder, and rec'd your telegram. In regard to having given refusal for sale of vessel, shall obey your instructions.

We had an uneventful passage until we were in Lat. 46 S, Long. 46 W, where we lost our rudder during a gale. All the braces broke, part from the stern post, the others from the rudder. We laid helpless eight days, without a rudder, during which time we were building a temporary one, which I was able to ship soon as completed.

It was a greater success than I anticipated; we could handle the vessel very well and carry all our square sails crossing the trades. Went through two gales with it. It steered us a distance of about 6500 miles, which we made in 72 days.

Shall not be able to get into discharging berth before Monday the 28th. Suppose it will take two weeks or more to get the cargo discharged, before which time it will doubtless be decided whether the government takes the vessel or not. She is all right except for loss of rudder.

Yours very truly,
W. M. MALLETT.

Aside from the interesting narrative phase of this story, the technical question of design and construction which it brings out is a significant one. Briefly stated, it is this: Were the rudders of American built ships in this period apt to be too large? When one thinks it over, the proper size for the rudder of a large vessel presents probably the most intricate problem of her building. It could hardly be solved by any mathematical formula. It depended on many complicated factors; the under-water design of the ship herself, her rigging and sail plans, her special loading practice, and the whole set of intangible stresses and balances which made up her individual performance under sail in a seaway.

Obviously, the only way the proper size for the rudder of a vessel could be determined was by experience, through the method of trial and error. But here one ran full tilt into shipbuilding conversatisms. Rudder making was a special and highly important department of the shipwright's art; the boss rudder-maker did nothing all his life but build rudders; he stood somewhat apart and beyond criticism. And it should be remembered that

in wooden ship construction the rudder generally was not a part of the vessel's design.

Thus shipmasters might come home from voyages to complain about the handling of their vessels and offer suggestions as to changes in rudder design, only to meet the fixed ideas of men who had made hundreds of rudders and knew exactly how they ought to be. That is, experimentation was hard to accomplish, and the subject naturally remained in the realm of argument and opinion.

In the present case, Captain Mallett, from his earliest sea experience, was known to have been an advocate of smaller rudders. He claimed that all the vessels he had sailed in simply had had too much rudder. It was chiefly in running free or before the wind in heavy weather that this point came up; in sailing on the wind it did not matter, and in bringing a vessel about a large rudder naturally would give quick action. But in running before a heavy sea, a large rudder made for hard steering; it required more manpower at the wheel, was often dangerous for the helmsmen, and frequently endangered the vessel herself by causing her steering to get out of hand. The ideal to strive for was a rudder of the smallest exposed surface which at the same time would bring the vessel about with sufficient speed and dependability.

The fact seems to have been that the original rudder of the *Guy C. Goss* was far too large; for many years she had been known as a hard steerer, although there was no reason for this in her fine design or splendid rig and gear aloft. But when Captain Mallett cut her rudder area practically in half in the jury rudder he built off Cape Horn, she handled beautifully and steered far better than she ever had before. The captain unquestionably was right, and the fact that he incorporated this correction in a permanent rudder of much smaller size than the original covers the whole issue.

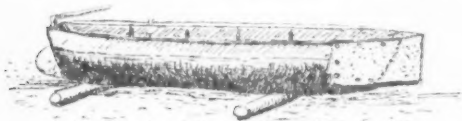


Notes

ST. LUCIA DUG-OUTS

IN view of the attention drawn by THE AMERICAN NEPTUNE to small native sailing craft in the various parts of the world, a few random notes on the dug-outs still used by fishermen of St. Lucia in the Windward Islands may be of interest to your readers.

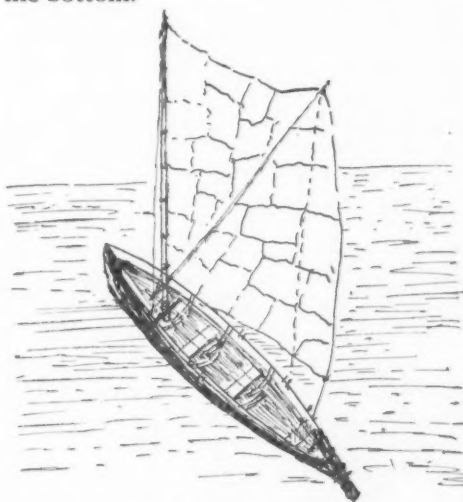
While staying in Castries, chief port of the Island of St. Lucia, in March 1940, my eye was attracted to the dug-outs used by the native fishermen. Through the good offices of a native boy connected with the inn where I stayed, I persuaded a weather-beaten old fellow to take me out in his fishing boat. Although St. Lucia has been under the British flag since 1814 the natives speak little English and their French patois is not comprehensible even to a Frenchman without considerable experience in the local dialect. As there was no interpreter who could translate the technical nautical terms which were necessary to describe the structural and functional parts of the craft and its rig, I am unable to supply the glossary which should accompany the hasty sketches which I made of these interesting craft. Unfortunately, also I was not equipped



☐ = strake above top of log --- = line of stem covered by iron plate.
 ■ = iron plate folded over bow.

with a tape or ruler with which to measure them, and have to rely on my observation and memory as well as on a few rough sketches made in my notebook.

I had seen some of these log canoes in process of construction. To start with, the log must be about 30 ft. long and 3 ft. in diameter. The bottom is roughly tapered with broad-axe and adze at the two ends, then the log rolled over and the inside adzed out until along the rails it is not over 11½ inches thick. Some 14 to 18 inches of solid wood is left in the bow, half as much in the stern and, as nearly as I could judge, 4 to 6 inches in the bottom.



Strictly speaking, these log boats have no keel, but in some cases the bottom has been roughly adzed to a very flat V, and in a few cases it appeared, either by accident or design, the V had been hollowed out so as to give the effect of the concave line of garboards above a very shallow keel. The bottom of the log is left almost straight except for a rise of a few inches toward the bow to facilitate running the boat up on a beach or on skids. However, when under way the fore- and aft-trim is such that there seems to be some drag to the line of the keel. This is not enough to enable the boat to be turned readily, as I discovered when I sailed her.

As the log boat does not float high enough out of water to afford safe free-

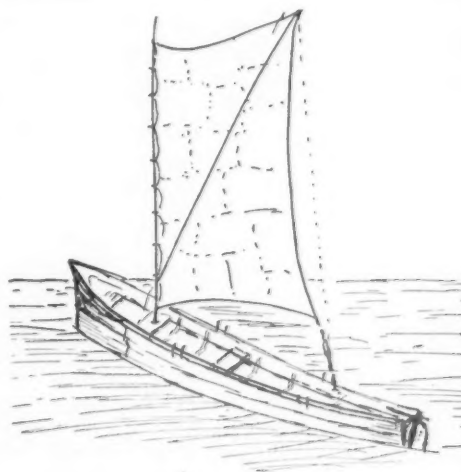
board, they have rabbeted the edges of what would have been the gunwale to receive a wide strake, or washboard, running the full length of the boat, and fastened to the log inside by natural bent knees at somewhat irregular intervals, with their lower ends overlapping thwartships to form a 'floor' on the hollowed surface of the log.

The most unusual feature of these boats, however, is the bow. Properly speaking, they have no 'stem.' From a point about six feet from the bow the log is tapered to a very blunt end—perhaps 4 inches wide. The strakes above are bent to meet a few inches beyond the bow end of the log. Over the edge thus formed by these strakes and by the sharpened end of the log is bent a sheet of iron (about $\frac{1}{32}$ of an inch thick) carried back and screwed or nailed to the strakes or log. The bent edge protrudes in a vertical cut-water like a sharp ram from well below the water-line to the top of the bow. No attempt is made to make this water-tight—in fact it stands clear leaving a sharp triangular space open between the forward edge of the 'stem' and the folded edge of the iron sheet. I was told it was intended to protect the 'end wood' of the log and the joining of the two strakes. This 'end wood' is the weak spot in every dug-out canoe, liable to rot or to crack and split. It is chiefly to protect this vulnerable part of the log from chafing and from the shock of bumping against a wharf or float or rocks on the landing beach that this iron covering is used. The appearance, however, suggests the ram seen in pictures of ancient galleys and it adds several inches to the water-line length.

These boats have either one or two masts, each carrying a rectangular sprit-sail. The masts are nearly the same length as the boat, made of limber saplings, without stays or shrouds and stepped through thwarts. The sails are made up of rather loosely sewed meal bags. Apparently the sail was originally 'cut' as a rectangle but long use had

pulled the peak out so that it appeared, when well filled, to be intended to peak up like an old coasting schooner's foresail.

The sketches reproduced here represent the craft I sailed in. It was about the average in size, some 20 ft. long, 30 to 36 inches wide, drawing, when carrying its usual complement of two or three men, about 15 inches, with a freeboard of about 15 to 18 inches in the waist,



rising to 30 inches at the bow and perhaps 24 inches at the stern. Some boats, little if any larger than this, carried two masts.

In such a craft as I have described I embarked with the boy as interpreter and the master and his partner as crew. The breeze being offshore we ran out of the harbor with the sheet well started but to my horror not held in the helmsman's hand or tended by the crew—it was casually made fast, together with the vang from the peak of the sprit, to a thole pin. On that point of sailing the lack of lateral stability was not apparent. I had an opportunity to study the construction—the rude but cleverly selected natural bent knees, the cracked roughly-beveled strakes forming a washboard, the rough adze-hewn inside of the log, the patchwork baggy sail. Once clear of the headlands we hauled

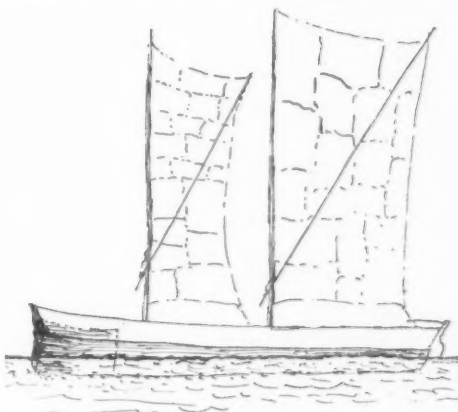
on the wind, the helmsman and the boy quickly shifting on their thwarts to the weather-rail, and the mate seizing a large bailing scoop. I may say that I shifted also though not so agilely when we ran into a choppy sea and puffy wind coming down over the island hills.

I expected the skipper now at least to take the sheet from the thole pin into his hand, but after trimming it he made it fast with a slip knot and merely relied on the agility of his crew to keep the lee rail a safe half-inch above the water; when that margin of safety was momentarily lost, he counted on the efforts of his mate with the big bailer. This matter of bailing evidently was an expert's job, for instead of throwing the water overboard, the mate threw most of it up into the sail for the purpose, as the boy explained, to make it hold the wind better. It did not require a Rod Stephens to see that there was much room for improvement in that respect, but it was soon apparent that constant sousing swelled the loose woven cotton until the sail attained some semblance of a real bit of canvas.

My boy had specified in engaging the boat that I was to be allowed to sail it. Having run down wind out of the harbor the skipper with malicious grin now motioned me to take the helm and sail the packet up wind back to port. I reached also for the sheet. He made a scornful gesture, turned his back and moved forward to take the bailer in hand while his mate was sent to the forward thwart. Here his usefulness became apparent as soon as I started to put the craft on the wind and prepare to beat toward the harbor.

With the wind abeam, or even one or two points for'd of the beam, the log boat made surprisingly little lee-way, but when I flattened the sheet and headed up I found at once that the length and straightness of the keel and the small size of the rudder made it utterly useless to attempt to luff to meet a heavier puff of wind. By the same token, the boat could not, by putting the helm

hard over, be made to turn fast enough or keep her headway long enough to fill away on the other tack. Here was where the mate stationed forward with the paddle came in. As soon as we were in the eye of the wind he paddled valiantly on what had been the lee bow and forced her around. In spite of baggy spritsail, and lack of keel or center-board, we somehow worked slowly by wide tacks back into the harbor.



Thanks to the efficiency of the bailer and the agility of the crew I got her up the harbor and ran her up on the beach by the fish houses without swamping. I came back with added respect for the daring and skill of these fishermen in venturing offshore in such craft. I had watched them on previous occasions and had marveled at their ability to stand the tradewinds and rough seas encountered in the passages between the islands. Although they seemed to be well down to their presumed plimsoll marks carrying a considerable weight of nets and gear and fish, they staggered along to their destination.

I was assured that although they occasionally capsized or swamped and lost their cargo they would not sink and could be righted, bailed out and make port under their own power. Having no wireless, no coast guard and on engines they are still comparatively safe.

PHILIP P. CHASE

Documents

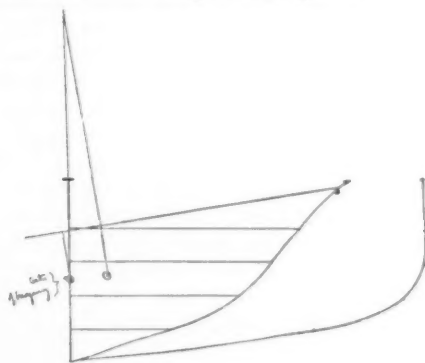
DICKIE BROTHERS OF SAN FRANCISCO
IN 1881

THE Henry Hall notebook, *Ship Building in the United States*, owned by the Penobscot Marine Museum of Seaport, Maine, contains a great deal of hitherto unpublished information on Pacific Coast shipbuilding. All the notes relating to the activities of the firm of Dickie Brothers follow verbatim, except for the lengthy specifications of two vessels. Footnotes are mine.

(Pages 461-471)

San Francisco. Nov. 9. The firm of Dickie Bros. consists of three men, all sons of William Dickie, a Scot who came over here about eleven years ago. Wm. Dickie, now 75 years old, is in the yard, and an active man yet. I found him with his coat off, working a bolt cutter. He showed me all over the big Mexican steamer they are now building. The Dickies are all ship builders. This family were ship builders as far back as the great grandfather of Wm. Dickie at least. The firm has built 19 vessels here, and is now preparing to build the 20th, a barkentine, 165 x 38 x 14 ft. hold, to carry 750,000 feet of lumber. They have built six or seven steamers for the trade to the Sandwich Islands, two or three U. S. Government vessels; and coasters and so on to complete the nineteen. The sons are not educated men, but they are very clear headed and intelligent. They keep an admirable set of books. Whenever a vessel is built, they can, in the end, tell the exact amount of every kind and variety of materials used; the number of treenails, spikes, and bolts; weight of iron etc.; and the exact amount of labor put into each part of the work. On one vessel they divided the labor in 33 classes. They can tell the

number of days labor and quantity of material required in making the keel; in making the keelson; the beams; the treenails; the planking; etc., etc. They know just what it costs to put on so many streaks of planking, information very useful in repairing work. Their system is complete and thorough. The sons are excellent calculators. They dip into questions of stability, etc., in regard to all their vessels. Their methods are not always those of the books. In calculating stability, one of the young men uses this plan: He measures the widths at stations on the water lines, and gets an average width for each water line and the deck line. He then constructs a dead flat section with these new widths. It is a simple process then to get the centers of buoyancy and gravity, and find the metacenter. He makes three experiments at different angles and then constructs a scale of stability. His method reaches results which correspond with those of the books. Here is the midship section of a small schooner, and the averaged midship section reached according to this plan:



The flare of the upper part of the new midship section for calculation comes from the flare of the bow and the shape of the stern. It shows that if a vessel is rightly built stability increases with the angle of heel.

The Dickies have done some iron ship

work, for a memorandum of which see 'Stray Notes' page 390.

Mem. One of the sons is in the Risdon Iron Works, as an engineer or Supt. of some kind.

The woods used here are Oregon pine, or yellow fir as it may be called, or red pine, exclusively for the whole body of the vessel. Laurel, a hard wood, is often used for stem and stern posts, bitts, windlasses, and such uses. Oak is used to a very limited extent for stem and stern posts. In finishing the cabins, walnut and other hard woods are used. Oregon pine costs here from \$20 to \$32, according to the length. Every ten feet in length adds to the cost. Very long pieces are used. The Mexican steamer, now building, has a keel made in three lengths, 108, 106, and 76 feet respectively. In the keelsons are lengths of from 113 to 117 feet. The planking is all from 40 to 100 feet in length. Long sticks are also used in the water way. On yachts and small schooners, the masts are often put in, in one piece, from keelson to truck. The one spar is lower mast and topmast too. In an iron steamer, rebuilt by the Dickies, they put in two masts, 150 feet long, and 26 inches thick in the partners, each in one straight piece. Those masts cost \$150 each in the rough stick. The spars are very nice and strong and light. Spar timber evidently is cheaper than on the Atlantic coast. The spars of the new Mexican steamer, including two masts 96 feet long x 26 inches, the foremast square rigged, will cost all made, yards and all, only \$546.

The Dickie shipyard has a band saw for cutting the frames. One young man with two helpers sawed five frames a day for the Mexican steamer and 9 frames a day for a small one, handling I think 4,000 or 5,000 feet of timber in so doing, that is for the small steamer. They have a planer and a very complete lot of tools and appliances. One bolt cutter, planking screws etc. Derricks. Four men put all the big pieces in the big vessel into the vessel.

Specifications of the wooden steamer Mexico

Mr. Packard, of G. S. & P. in Bath was here two weeks ago. He expressed surprise at the good workmanship and finish on this vessel. He asked particularly, if it were contract work, and could hardly believe it. He said his firm does not do such contract work as that.

The *Mexico* certainly is a beautiful vessel. Her lines are all graceful. All the frames forward are full, but the water lines are slightly curved. Not much dead rise to the boat. 3 or 4 feet perhaps.

(Pages 476-477)

The Dickies built the propeller *Bonita* in 1881. She was 172' x 27-1/5' x 8-9/10'. Tonnage mts., 165-3/5 x 24-1/5 x 8-4/5. Two masts; elliptical stern; height under spar deck 7-1/3 feet. The depths on this boat are:¹

z = 10.8	2	3	4	5	6	7
10.4	10.	17.8	22.	23.	23.8	24.2
10.	9.6	17.2	21.4	22.8	23.8	24.2
9.6	9.	15.6	20.5	22.4	23.5	24.
9.2	7.8	13.	16.2	19.	21.8	22.
8.8	1.2	3.2	3.2	3.2	3.2	3.2
8.8						
8.7	8	9	10	11	12	
8.7	24.2	23.8	22.8	21.	17.8	
8.6	24.2	23.8	22.8	19.6	13.	
8.4	23.8	23.2	21.	16.2	9.	
	21.6	20.6	15.1	11.8	5.1	
	3.2	3.2	3.2	3.2	1.2	

The Cabin is about 25 feet broad, narrowing at the stern to 3'. Engine room 28-4/5 x 12-1/3 x 7-1/3 = 25.85 tons. Under tonnage deck = 241.80 tons; between decks 247.07 = 488.87 tons.

(Pages 224-227)

Specifications of a barkentine, prepared by Middlemas & Boole, the vessel soon to be built.² . . . The Dickies will build this barkentine for \$42,000, the same price that Goss & Sawyer are building a barkentine for, for the Pope & Talbot Co.³

(Pages 393-395)

San Francisco. November 9. A beginning in the way of Iron Shipbuilding has been made in San Francisco. The

¹ For an explanation of these figures see Section 4153 of the Revised Statutes (1873).

² Barkentine *Newsboy*. Her plans (as a bark) were collected by the Historic American Merchant Marine Survey.

³ Probably bark *Cowlitz*.

first of it appears to have been the work, put upon the *City of Peking* and the *City of Tokio*. Men were sent here by Roach and perhaps others, to do the work here, amounting to from \$300,000 to \$400,000.

In 1879, the iron propeller *Bolivar*, built by Palmer in Hull in 1866, was taken out of the water, and altered here by the Dickie Bros. at the Risdon Iron Works. She was lengthened I think. When the changes were completed, she registered 1,462 tons, and was called the *Victoria*. 68 feet of length and 800 tons of meast. were added to her. She sold for \$20,000, and \$120,000 were spent on her.

In 1879, another piece of work was done by the Dickie Bros. and one or two associates in the enterprise but not by Risdon Iron Works. The iron ship, *Jessie Osborn*, built at Dumbarton, Eng., in 1877, was wrecked about 9 miles north of this city. A large hole was knocked through her bottom. It must have been 10 or 15 feet in diameter. The ship was raised by tightening the decks, and then forcing air into her. She became buoyant, rose, and was towed to San Francisco and here repaired. Goodall was in this. The ship cost them about \$60,000. They tried to sell it in N. Y. two years ago for \$40,000, but could not. Now they don't want to sell at all.⁴

In the way of new iron vessels, one boat was built to send to Mexico, not of large size, a sort of lighter I think. I do not know who built that boat. It is said that it was an awful piece of work.

The Dickies are now building a 60-foot iron water boat at some boiler shop, probably the Risdon Iron Works.

There has been one other sailing vessel repaired here, by Thayer.⁵

Later: The English ship, *Hilton Castle*, lost her fore foot and was repaired by the Risdon Iron Works. The *Costa Rica* which went ashore 6 or 7 years ago,

⁴ *Jessie Osborn* was renamed *Mariposa* by Goodall; she was sold back to her original owners at Liverpool in 1882.

⁵ *Bark Annie Johnson*, ex-ship *Ada Iredale*.

was repaired at the same works: 33 plates were put into her bottom. Almost an entire new bottom was put into the English steamer, *Gussie Tilford*. The *Barnard Castle* was also repaired by replacing a part of the bottom. All of this was by the Risdon Works. The new water boat is 68' x 16' x 6'. She has a corrugated iron deck. A very pretty model, and a neat job in every way. At the Risdon Works, the opinion is that the duty on materials for iron vessels should be low, like that on railroad iron. The training of men was spoken of. If the iron shipbuilding industry is to be built up, Govt. might well assist until the men are trained, after which the industry can take care of itself. On the *Bolivar*, the men were new at first. The last part of the work cost 50 per cent less than the first part. A man will have his force all trained by the time he has built his third ship.

One iron vessel owned here is the ship, 1,078 tons. She was an English ship, oil laden, which took fire somewhere off the southern coast of South America. She was abandoned, and burned for nearly a year. Finally she was towed to the Sandwich islands, and then to S. F. where she was repaired and straightened. She has ever since been employed in the wheat trade.⁶

The iron boat, built at the Risdon works was launched on the 16th of December. She was built for Goodall, Perkins & Co. 65' x 13' beam, 7' deep. Two high pressure engines, 8" x 8"; two boilers 6' x 6', with 100 lbs. pressure, and 35 horse power. Plating 1/4" and 5/16" thick, with 5/16" corded iron deck. Tank holds 10,000 gallons, being divided into four compartments. Less than 600 lbs. of wood in her. The house is of iron. She is sharp, and a good model, rather more of a tug model than of a yacht. Weight of boat about 12 tons, engine 6, water for shipping 42, and mis. about 8 tons: total D about 68 tons.⁶

⁶ Steamer *Water Nymph*.

Contributed by John Lyman

FOOD AND DRINK ON SHIPBOARD
1800

ON the Norfolk Alexandria packet
'... No food, a cabin of one room
To eat and sleep in was our doom ...

... The mate had sport
For with a passenger he went
To get some butter, the intent
But I myself believe they sought
What straggling fowls were to be got
For when they came on board again
They brought with them of geese a
twain,
A turkey, struggling for his life.' ¹

'Portable Soup — M. de Lille's Restorator, Quaker Lane, wholesome and convenient at sea and will keep through the longest voyages.' ²

For the Northwest trade ships should carry 'bread in clean brandy casks ... butter and pickle in double casks, the outer filled with brine ... beef well packed ... in addition ... beans, peas, dried apples, wortle berries, pickled cabbages, pigs and cattles feet and ears, tripe, pickles, livestock and plenty of water.' ³

Delano said that beef he had from Samuel Gregg of Boston he carried on a three year voyage, half the time between the tropics, and of more than 100 casks all were good to the last one opened on his return.

'Isaiah Dodge, Cooper has water casks 20 and 60 gallons.' ⁴

¹ [Anne Ritson], *Poetical Picture of America* (London, 1809). She arrived late in 1799 and went to Alexandria apparently in the spring.

² *Boston Independent Chronicle*, 9 October 1800.

³ Amasa Delano. *Narratives of Voyages and Travels of the Northern and Southern Hemisphere* (Boston, 1813). Delano left Boston bound for the Northwest coast 10 November 1799.

⁴ *Salem Impartial Reporter*, 11 December 1800.

'Restorator, J. M. Lebour & Co. have taken a house on North Main Street ... delicacies ... for epicures ... weak stomachs. . N. B. Captains of vessels and others may have at the above house geese and turkey wings preserved and put up in pots to carry to any part of the world — warranted to keep good.' ⁵

'Duke for sale. A preparation for punch. This Duke is so prepared that half a pint or less put into water makes a quart of good flavored punch without any other mixture. It has been found on experience to produce as good punch as can otherwise be made and is very convenient for seamen as it will keep good during the longest voyages as also for tavern keepers especially those back in the country. Sold at a low rate by S. Chamberlin, at the Sign of the Blue Bottle, Cambridge Street.' ⁶

'... same day [28 April 1800] arrived there [St. Helena] the ship *Ulysses*, Lamb from Canton to Boston — March 3rd in Lat. 15 S, Long. 109 E, met with a violent sea ... loss of his masts and part of his cargo and provisions ... fell in with ship *Jefferson*, Morris of Phila., in Lat. 28.30 S Long. 66 E (!) who generously supplied him with provisions.' ⁷

'Had company on board (for dinner). Gen. Vandalure of the British Army, Mr. Elmslie, the United States Consul and all the British Captains (in port). Lost the launch in a gale. Company stayed on board all night as result.' ⁸

'Finished filling water 26,500 gallons.' ⁹

'Received some turtle on board.' ¹⁰

⁵ *Ibid.*, 22 December 1800.

⁶ *Boston Columbia Centinel*, 18 June 1800.

⁷ *New York Commercial Advertiser*, 15 July 1800.

⁸ Log of the U. S. frigate *Essex* (Preble, Newport to Batavia) for 24 March 1800 at Cape of Good Hope.

⁹ Log for 29 May at Batavia Road of U. S. frigate *Essex*.

¹⁰ Log for 28 June still at Batavia.

'On March 29 [1800] a ship bore down . . . and asked for bread. Said they had 27 men on board taken out of a Danish vessel. They hailed in broken English. The men had red caps. She crowded sail from the *Diana* without waiting a reply to the request. Her name could not be ascertained but the word Nantucket was on her stern . . . imagined to be a prize to some French cruiser.' ¹¹

'On the 9th [of Sept.] the storm abated. The only food was 3 candles. There was no water. They found one drowned rat. Sept. 10th they ate part of the rat and found a piece of pork. On the 12th they found some more meat but their throats were too parched to swallow . . . 13th a little rain water . . . 17th taken off, by the ship *Mercury*, Treadwell, Portsmouth.' ¹²

'They threw vinegar in Bell's daughter's face.' ¹³

'The last 18 days [of the voyage] crew had 1/2 biscuit per man. For five days only water.' ¹⁴

In Lat. 35°36 and longitude of Cape Fear masters bound north will meet a large unusual bank . . . 'The bank abounds with fish, sea bass, sea trout, flounders, skate, tuna, and dog fish . . . a vessel has filled two barrels on this bank in two hours with only three lines and three hooks.' ¹⁵

¹¹ New Bedford *Columbia Courier*, 23 May 1800, from the account of the arrival 19 May of the ship *Diana*, Davis, Liverpool 58 days.

¹² Philadelphia *Gazette of the U. S.*, 17 October 1800, account of the wreck of the ship *Hope* of New Bedford.

¹³ Philadelphia *Aurora*, 9 September 1800 complaint of Joseph Bell against the brutish conduct of Captain Andrew Stephens of the ship *Lavinia* during voyage Liverpool to New Castle.

¹⁴ New York *Commercial Advertiser*, 7 April 1800, account of ship *George and Harriet* 4/6 Liverpool to Boston 115 days.

¹⁵ William Heather, *North American Pilot* (London, 1801).

'Seven days and seven nights did these unfortunate people continue in this dreadful situation a prey to starvation and misery, to the chances of the ocean and subsisting on nothing save their own urine.' ¹⁶

'They drifted for 9 days . . . a dog belonging to the brig who had swam to the boat . . . was killed a few days afterward for food but their appetite recoiled from such a substitute and none of the unfortunate people could eat of him.' ¹⁷

'Just Received a large quantity of imported Lemon Juice.' ¹⁸

'Burke & Roene have for sale 400 barrels ship and pilot bread.' ¹⁹

'Beef of first quality, fit for India voyages now putting up, and for sale by William Sheaff 168 High Street.' ²⁰

'James Capdevielle at 31 N. Alley Street has . . . pickled geese and turkeys in pots, dried sausages, high seasoned beef, beef tongues, Martinico liquor and all sorts of cordials.' ²¹

'Captains of vessels may be supplied with the essence of beef in jelly, by the pound that will keep good to the West Indies.' ²²

¹⁶ Alexandria *Columbia Mirror*, 21 October 1800, account of the voyage and wreck on 15 September of the brig *John*, from Lisbon 19 August, bound for Philadelphia.

¹⁷ New Haven, Connecticut *Journal*, 18 June 1800, account of the wreck of the British armed brig *Swallow*, which had sailed from New Haven 2 May.

¹⁸ Alexandria *Columbia Mirror*, 22 May 1800, advertisement.

¹⁹ Norfolk *Epitome of the Times*, 25 September 1800, advertisement.

²⁰ Philadelphia *Gazette of the U. S.*, 25 September 1800, advertisement.

²¹ Philadelphia *Aurora*, 27 December 1800, advertisement.

²² Portland *Eastern Herald*, 15 December 1800, advertisement of Joseph E. Baker, 'Portland Restorator.'

'Patented Bread Manufactory of Middletown . . . offer . . . ship bread of various qualities . . . etc.' ²³

'The ships crews grog stopped on account of buying liquor alongside.' ²⁴

'Came on board Mr. Morton the American Consul at the Havanna . . . and a number of gentlemen to dine during the afternoon, fired 21 guns to the Toast that we drank at Table.' ²⁵

'No Bum Boats are to be allowed alongside without leave from the Officer of the Deck and then no promiscuous use of Fruit to be suffered among the crew which has probably been the Cause of the present Sickly State of the men.' ²⁶

'The Ration allowed prisoners is a half a pound of meat, and one pound of bread, and one pound of potatoes and other vegetables per day.' ²⁷

'On ye 8th April fell in with and captured a schooner from Portorico . . . took out of her everything that was eatable, vis. about 20 goats, a considerable number of Turkies and fowles besides Melons, Plaintains and other Vegetables.' ²⁸

²³ Middletown, Connecticut, *Middlesex Gazette*, 27 June 1800, advertisement.

²⁴ *Naval Documents, Barbary Wars* (Washington, D. C., 1939), Vol. I. Log, U. S. S. *George Washington* in the Dardanelles, 13 November 1800.

²⁵ *Naval Documents, Quasi War with France* (Washington, D. C., 1937), Vol. V. Extract from Journal, Lt. T. Mullooney, U. S. N. Commanding U. S. S. *Ganges*, 16 April 1800.

²⁶ *Naval Documents, Quasi War with France* (Washington, D. C., 1938), Vol. VI. Letter, Capt. A. Murray to Lt. A. Shirley 22 August 1800 from U. S. frigate *Constitution* off Cape Franoise.

²⁷ *Naval Documents, Quasi War with France* (Washington, D. C., 1937), Vol. V. Letter from Sec'y of Navy, 9 May 1800 referring to prisoners taken in the Quasi (and entirely naval) war with France.

²⁸ *Naval Documents, Quasi War with France* (Washington, D. C., 1938), Vol. VI. Letter, Midshipman Roche at Cape Nicholas to Capt. Talbot 12 June 1800.

Contributed by Peter Oliver

BROKEN ANCHORS

THE ship *Bolina*, 1256 65/95 tons, Captain Stilphen, was built at Thomaston, Maine, for Watts McCullum & Co., by Mehan & Watts and John Hilt. Launched in October 1857, she left there 1 November in ballast for New Orleans (with a small amount of hay) to load cotton for Liverpool. On 12 November, she was lost.

Nassau, N. P., Nov. 24th, 1857

Capt. S. Watts

Dear Sir

I have the Misfortune to acquaint you with the loss of the Ship *Bolina* in a Severe gale from the North on the 12th of this month. Myself Crew and passengers with the Ships Sails and riggen arrived here on the 15th, the Ship is a total wreck. I had fine weather but continued head winds untill I made Abico, ten days from Thomaston. When about up with the light the wind backed to the North, and on Wednesday the 11th, the day after I passed Abico, it blew very heavy from about North to N. N. W. with very heavy Squalls, so that I could carry but very little Sail, the Ship being tender. The Close reefed topsails brought her nearly on her beam Ends. In waring it would take a long time to get her round, thereby losing much precious Sea room. The beginning of Wed. Night it blew so heavy I was forced to take in the mizzen top-sail and foresail, the squalls coming down on me very heavy. I hove ship and tried to fetch out by Abico again, but found that impossible, the ship laying down so bad that all the way she made was to leeward, I was forced to do the best I could where I was. Thursday 8 A.M. hove ship about four or five miles E. N. E. of Stirrup Key. I was obliged to lash the jibs so as to hoist the heads of them before she would answer her wheel at all. When hard up on the port tack she would head E. N. E. which course I was in hopes would

take her clear of the Banks and Islands, but as I ranged to the Eastward the winds began to head me until I could head no better than East. At 10 A.M. in the heavy squalls the wind very baffling heading sometimes S. E. sometimes East I soon found we were on soundings. I could do nothing on the other tack, for if I attempted to heave round it would take so long that I should be near the Keys, to near to save the ship from going on shore. My only safety were my anchors. In less than twenty minutes, I had them both down and the chains out to the bare end. While I was in the act of getting them over, my fore and main topsails sheets parted and in a few moments the sails had blown in peaces. When the sheets parted, they parted the fore lift which left the fore yard unmanagable. The anchors after a short time brought her head to the wind. She lay so about ten minutes, when she started again, coming broad side to the wind. I then got over the stream anchor with the best hawser, that soon parted; the ship nearing the land fast. My only chance was to cut away the masts, which I did, but all to no purpose. She still continued to drive before the wind until about one O'clock P.M. when she brought up. Then I had some hopes to save the ship, but the gale continued to increase to a perfect Hurricane, tearing Everything before it. About 2 P.M. she started again and draged to about one and a half her length from the surf, when she brought up again. She lay so for about half an hour when she took her anchors and ashore she went on Berry Island broadside on the beach, the sea making a clean breach over her from stem to stern. We stoped on board untill morning when she had bilged and her hole full of water. The wreckers say that she lays on the wreck of an old brig.

I found all hopes of saving the ship were vain. I imployed wreckers to assist me and my men to save what we could. On Sunday morning the 15th, the sea began to make again (we had saved all the sails and riggen) We started for this port where we arrived that night (I left a man in charge of the ship untill he heard from me). All of the materials of the ship has been sold for the benefit of whom it may concern. Today a wrecker came in with about 80 fathoms of each chain. He says both of the anchors is broken close to the crown. If so it accounts for them not holding. The distance the ship draged was about eight miles. I think today I shall go down to the ship and see if there is anything more that can be saved. I should like to save the windlass and Capstans if possible, if not I shall sell all and start for home the first chance. The salvage awarded the wreckers is 55 per cent of Nett sales of sails and riggen and 10 pounds to the wreck Master. The salvage on the chains is not yet determined, yet they want 65 per cent. I shall send you a copy of my protest by Mr. Boggs. He leaves for Charleston tomorrow. I shall take another with me when I leave. I trust you are well insured in good offices but insured or not I have done all that lay in my power to save the ship, and since that failed I have done and am doing all I can for all concerned. You will oblige me much by addressing me a letter to N. Y. in the Care of Snow and Burgess, so that I can have it on my arrival there. I shall get to Thomaston as soon as possible after my arrival in N. Y. Hoping this will find you all prepared to meet the loss of the ship *Bolina*, I remain Dear Sir, Respectfully yours

N. Stilphen

Contributed by Samuel W. Lewis

Queries

15. CHANT FOR TIMING SALUTES. Was the chant used to time the firing of salutes—"If I wasn't a gunner I wouldn't be here. Port (or starboard) battery, fire!"—in use in the Federal Navy at the close of the Revolution? This is undoubtedly the American version of the British chant, 'If I hadn't been born a bloody fool I wouldn't have joined the Navy. Fire!' The inquirer has been told that the American version was in use in the period of the War of 1812 but would like to know if anyone knows of its origin or the date of its first use in our Navy.

ROBERT C. TRACY

16. JAMES BARD. Information on the life of James Bard, painter of steamships, and lists of his works would be gratefully received.

HAROLD S. SNIFFEN

17. CALKING IRON. MAKING IRON. Can any reader tell me if these two terms are synonymous? In Captain Riesenberg's *Standard Seamanship*, p: 924, I find a drawing of a caulking tool with the caption: 'Calking or Making Iron,' which infers that both terms refer to the same tool. In the *Naval Artificer's Manual* (1918) compiled by Assistant Naval Constructor McCall Pate, U.S.N., on p: 335 the 'Calking Iron' is described as a tool used to work the oakum into the seams; the 'Making Iron' as a tool used to drive the oakum down solid. The last reference shows that there is a difference between these two tools.

R. DE KERCHOVE

18. BINDING STRAKE. LANDING STRAKE. Fincham in his *Outline of Shipbuilding* (Vocabulary p: 22.—Boat Building) writes as follows:

"The Binding Strake is placed to be parallel from the lower edge of the landing strake. . . ."

The landing strake is then brought on, and the sheer or upper strake when the gunwale is on.'

According to this quotation the Binding Strake is the third strake counting from the gunwale down.

In the *Naval Artificer's Manual* (p: 337) the 'Binding strake' is defined as 'A strake of planking having greater strength or thickness than the other strakes.' There is no mention as to the location of this strake.

According to Blocksidge (*Ship's Boats*, p: 169) the 'Binding Strake' is located next to the sheer, or upper, strake and, therefore, second from the gunwale. No mention is made of the landing strake.

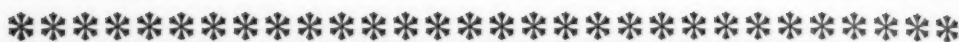
I should like to know:

- (1.) Where the Binding Strake is usually located in open boats.
- (2.) Are some types of boats built with a landing strake and others without.
- (3.) What is the purpose of the landing strake, and is it of greater thickness than the other strakes.

R. DE KERCHOVE

19. A BOSTON PACKET. Information regarding the *Caesar* or *Julius Caesar*, a vessel belonging to the Boston Union Line of Packets, sailing between Boston, Liverpool and Philadelphia about 1820, commanded by a Captain French, would be appreciated.

THOMAS HORNSBY



Answers

WHALING NAVAL AND MERCHANT VESSELS. The plans of the 330-ton merchant vessel appear on a large scale in *The Shipwright's Vade-Mecum* (2nd ed., London: J. W. Norie and Co., 1822), in the folio of Draughts. The first edition was printed for D. Steel in 1805, and was intended to provide a cheaper and more popular publication than his *Elements and Practice of Naval Architecture* of the same date. In addition to the 330-ton merchant vessel the sheer draught of a 74-gun ship is given in the plates to the smaller work. Neither of these appear in the plates to the *Elements and Practice of Naval Architecture* but their set-offs and dimensions are to be found in the Tables.

W. SALISBURY

8. FIRST FOUR-MASTED SHIP. Letters from R. C. Anderson, Daniel R. Bolt, and other readers state that there is no ship *Romsdal* listed in *Lloyds Register*, 1872/3, 1874; *Bureau Veritas Registers* for the 1870s; *Mercantile Navy List*, 1876; *American Lloyds*, 1874; *American Bureau*, 1874 to 1876; *Allan Line Roll of Honour in Sea Breezes*.

9. COBBLESTONE TRADE. President Eliot tells about the old cobblestone trade in his *John Gilley: Maine Farmer and Fisherman*. Cobblestones may still be seen in sections of Louisburg Square, Boston, and in the courtyard of the Harrison Gray Otis house at 45 Beacon Street.

S. E. MORISON

CAPTAIN FRANK SPURLING of Northeast Harbor, Maine, who came from Cranberry Island nearby and used to sail my father's yachts, told me that when he was a boy he used to go with his father to

Grand Manan Island, N. B. and load with cobblestones at a beach on the west side of the island, and that there was a regular habit of calling there for stones. The cobblestones were used in Boston and Salem.

MARY C. WHEELWRIGHT

IN MY YOUTH I remember that 'Horse' Chestnut Street in Boston was paved with round cobbles and I think that Branch Avenue (now Branch Street) was. I do not think they were removed until the horse era had entirely passed and the street became Chestnut without the 'Horse.' Many streets in Philadelphia were paved with cobbles. I remember some of them in 1887, but I do not know when they were removed. P Street in Washington (Georgetown) was paved with cobbles, and the last stretch in the region of 30th Street was removed only a few years ago, over the protests of the abutters. I remember some in Alexandria, Virginia, and I think there are one or two short stretches still in existence. All these cities are accessible by water, and I doubt if the stones came from anywhere except Maine. I know of no beaches south of Boston which have any.

JAMES OTIS PORTER

10. WIRE RIGGING. According to R. B. Forbes, *Notes on Ships of the Past* (Boston: 1885), p. 144, the ship *Washington* of Philadelphia had chain rigging before 1826. There was a history of wire rigging by F. L. Oliver in *Yachting* (February 1940), p. 55.

JOHN LYMAN

THE FOLLOWING ARTICLE, published in the *Boston Daily Traveller*, 31 August 1857, may be of interest.

*'Wire rigging for ships:—*The Liverpool *Courier* says three-fourths of all the ships now fitted out of Liverpool are rigged with wire rope. It is described as a fourth less in weight, and not one-half the bulk

of that made of hemp, and the cost is also 25 per cent less. It is much less susceptible than hemp of atmospheric changes, and it is predicted that in a few years it will supersede hemp rope for standing rigging. A recent trial of wire, hemp and Manilla ropes was recently made at the King's dock, Liverpool. The straining tests showed the immense superiority of wire rope over that made even of the best fibrous material. The testing of the hempen ropes proved the strength of Manilla to be far superior to Russian hemp, taking many of the merchants, shipmasters and riggers present by surprise, as a different opinion had been entertained by many of the gentlemen present.

The English have the advantage of us in regard to iron ships as well as wire rigging, on account of the cheapness of material. Iron ships are increasing in number in England, and in many respects they are superior to wood, but they can not be built here until iron becomes cheaper. An iron ship in England cost only about the same as a first-class wooden ship, but in the United States would probably cost three times as much as a wood-built ship. The depreciation on an iron ship is much less than one of wood, and when the iron vessel is worn out, the old material will go far towards paying for new. These are important considerations. There is no one thing which we so much need, as the ability to produce iron as cheaply as England. We have the crude materials in abundance, cropping out on the surface

of the earth instead of being compelled to dig hundreds of feet deep for it, but we need the skill and the labor which is requisite.'

L. W. JENKINS

12. W. P. STUBBS. I have a water color by this artist showing the ramming and sinking of U. S. S. *Cumberland* by the *Merrimac*, 8 March 1862, which is copied from the illustration appearing on page 124 of Porter's *Naval History of the Civil War* (1885). Stubbs signed his work in a peculiar manner, entwining the first letter of his name around the second in the form of a fouled anchor so common to nautical decoration.

THOMAS HORNSBY

THE UNITED STATES NATIONAL MUSEUM has three paintings by W. P. Stubbs, entered on its records as received from the painter in 1884 and 1888. The record of one contains the statement that it 'was purchased from W. P. Stubbs, 18 Cottage Street, Charlestown, Massachusetts.' This appears to have been in 1888. The price paid for the painting was \$13.00. It was purchased for use at the 'Cincinnati Exposition' (Centennial Exposition of the Ohio Valley and Central States, 1888).

FRANK A. TAYLOR

13. CAPE HORN. Captain James Steele of Coronel, Chile, has described an ascent of Horn Peak, performed 15 December 1899, under the title 'Reminiscences of Auld Lang Syne,' *Sea Breezes*, XVI (1932), 262-263.

JOHN LYMAN

News

THE MARINERS' MUSEUM

Newport News, Virginia. On 21 November 1941, launching day of the U. S. S. *Indiana* at Newport News, the Elwin M. Eldredge steamship collection was first exhibited in the North Wing of the Museum. The Hague Collection, displayed as a unit since 29 May 1941, was disassembled and rearranged by subject within the collection of the Museum, thus providing the entire 6000 square feet for display of the Eldredge Collection.

The extent of the Eldredge Collection may be appreciated by the fact that it was possible to adequately display less than twenty-five percent of the whole, which includes 1000 prints, 300 paintings, 125 mechanical drawings, 100 posters, 25,000 photographs, 10,000 postcards and 200 miscellaneous exhibits including display models. Concluding his forty years of acquiring all types of records of steam vessels, the value of Mr. Eldredges' collection is enhanced by his compilation of an historical record of every craft represented.

The present display has been limited to nineteenth-century American merchant steamers with emphasis on transoceanic and Atlantic coastwise liners, together with steamboats of New York Harbor, Hudson River, Long Island Sound and the Chesapeake.

The Mariners' Museum has recently received from the Southern Pacific Steamship Lines the donation of fifteen builder's half-models of Morgan Line vessels, 1865-1924.

PEABODY MUSEUM

Salem, Massachusetts. The Museum will publish in the late winter *Mary Celeste—The Mystery of an Abandoned Ship* by Charles Edey Fay, formerly Vice-Presi-

dent of the Atlantic Mutual Insurance Company. Mr. Fay has devoted many years to the investigation of the *Mary Celeste* mystery, and has prepared a thoroughly documented account that is free from melodramatic speculations. The book will be illustrated by reproductions of contemporary photographs and documents, and by a colored wood engraving by Rudolph Ruzicka showing the *Mary Celeste* in the condition in which she was found by the *Dei Gratia*.

PEABODY MUSEUM MARINE ASSOCIATES

Salem, Massachusetts. On 22 September 1941 Nat A. Barrows spoke on 'The Story of the *Squalus* and other Submarine Disasters.' On 27 October Giles M. S. Tod showed moving pictures of the schooner *Theoline* taken during the previous summer. On 24 November Robert E. Peabody spoke on the voyage of the ship *Mount Vernon* to the Mediterranean, 1799-1800, and the paintings of M. F. Corn  who came to Salem as a refugee in the ship.

NOTES ON CONTRIBUTORS TO THE AMERICAN NEPTUNE

John Haskell Kemble is a member of the history department of Pomona College, Claremont, California.

Augustus Peabody Loring, Jr., is chairman of the board of the Plymouth Cordage Company.

Charles F. Mills is vice president of the First National Bank, Boston.

T. C. Gillmer, an officer in the United States Navy, collected material on Mediterranean craft while stationed in the Mediterranean.

Lincoln Colcord, one of the Editors of THE AMERICAN NEPTUNE, is Secretary of the Penobscot Marine Museum, Searsport, Maine.

Philip P. Chase is a Lecturer on History, Harvard University.

John Lyman is an officer in the United States Naval Reserve on active duty.

Book Reviews

WILLIAM LYTLE SCHURZ, *The Manila Galleon*. (New York: E. P. Dutton & Company, 1939). 6" x 9 $\frac{3}{8}$ ", cloth. 453 pages, 4 maps, index. \$6.00.

This highly readable and informing book describes in full and for the first time, one of the most extraordinary branches of sea-borne traffic in modern history. Everyone has heard of the *Manila Galleon*, the lone, majestic square-rigger which sailed from Acapulco to Manila with the northeast trades, laden with ingots of Mexican and Peruvian silver, and returned some six months later in the zone of westerlies around latitude 40° N, laden to the gunwales with Chinese silks and sundry oriental luxuries. The capture of an Acapulco galleon with a cargo worth up to a million pounds sterling, was the ambition of every high-grade English and Dutch corsair; and only four times was the trick pulled off successfully. One is constantly running across references to these galleons in the voyages of Cavendish, Dampier, Cook, Lord Anson and others; but no history or description of the trade has ever before been published in any language.

Mr. Schurz, through long and painstaking study in the Archives of Seville and of Simancas, and in printed voyages and memoirs, has unravelled the entire story. This earliest of quota trades began in 1565, only three years after Legaspi's conquest of Manila, and lasted until 1815. Manila was allowed to send one galleon a year to Acapulco, charged with all manner of oriental products, and sell the cargo for silver bullion, which, being in great demand in China, served to buy still more silks, Indian cotton, gold, precious stones, and a hundred sorts of 'apes and japes.' Most of the galleons were built of teak by Chinese workmen at Cavite, but to Spanish designs. Profits were fabulously great, and so large a proportion of them was 'kicked back' to higher officials, that the utmost efforts of Spanish silk interests, implemented by mercantilist philosophy, were unable to put a stop to the trade. There was a fixed annual quota of merchandise, but it was never observed; the galleons grew greater yearly until the maximum was reached in the *Santissima Trinidad* captured by the English in 1762. Of 2,000 tons burthen, drawing 33 feet when laden, with a gun deck 167 $\frac{1}{2}$ feet long and a 50-foot main beam, she was the leviathan of her day. These massive vessels carried hundreds of people as passengers and crew, yet were allowed to put to sea with chests and bales of goods cluttering up the decks, and insufficiently provisioned for a voyage that seldom was shorter than five months, and sometimes stretched out to seven or eight.

Mr. Schurz has fascinating chapters on the conduct of the trade in every detail; the Chinese community of Manila; the system of negotiable chits that gave every Spaniard there a share in the cargo space; the strange, abortive attempt of the Manilaños to do business with the Japanese in the seventeenth century; the sending out of feeder lines to the Spice Islands, Indo-China and Siam; the attacks by English and Dutch corsairs; the navigation, shipwrecks, and details of the voyage out and

home; breath-taking details of the variety and value of cargoes. Most significant as well as amusing were the various and successful devices to outwit the orders of a paternal government some 12,000 miles away.

The maritime reader misses details as to the rig and sail plan of the galleons, information about their speed or how close they could lay up to the wind. The few maps provided are so drastically reduced as to be almost illegible, and illustrations are wanting. Since the trade continued into the last century, there must be in existence engravings or other pictures of some of the galleons. But Mr. Schurz's hundred pages on 'The Galleons,' 'The Route' and 'The Voyage' are crammed with interesting marine information, and the book is one of the worthiest contributions to American and Oriental maritime history made in the present century.

Harvard University

S. E. MORISON

M. V. BREWINGTON, *Chesapeake Bay Bugeyes*. (Newport News, Va.: The Mariners' Museum, 1941). 7" x 10", boards. x + 117 pages, 48 illustrations, map, 8 chapter headings, 24 folding plates. Publication No. 8 of The Mariners' Museum. \$3.00.

It is fortunate that the making of a record of the Chesapeake Bay bugeye was not too long deferred. There have been many local types of vessels which have become extinct because of changed economic conditions, and no satisfactory record of them exists. An accurate account of the development of such a local type can be a distinct contribution to the social and economic history of that section of the country with which it is identified. The historical literature of Maryland has been concerned largely with major political developments and the parts played in them by Maryland heroes. The broader economic aspects have, of necessity, received due attention, but it would seem that a better knowledge of how important groups of people earned their livelihood is needed to obtain an adequate perspective of any given period. Mr. Brewington's *Chesapeake Bay Bugeyes* will undoubtedly be considered a contribution of this kind, as well as his *Chesapeake Bay Log Canoes*, published in 1937.

Unquestionably, however, the group of readers who will receive this book with the greatest enthusiasm are those interested in boats as such; the marine archaeologists, the model builders, designers of small boats, and those sailors who like to know by what mean sailors of other days, or of other waters, solved the problems imposed upon them by their daily work of 'following the water,' by weather and by the various local conditions which existed for them in their time.

Unfortunately, the scene portrayed at the beginning of the first chapter is hardly any longer to be found. To sight a bugeye under sail on the Bay is now an event, and to find them in harbors, one must single out the few places frequented by the remnant of a once-great fleet. The regret of their passing will, however, be alleviated no little by the existence of an accurate record of what they were. Such a record is this book of Mr. Brewington's.

The compilation of the data on bugeyes has presented many difficulties. Relatively little was obtainable from libraries. The comprehensive bibliography to be found in this book is apt to give a misleading impression, for in only a few of the

many books, documents and periodicals listed are there much more than casual references; in other cases only misinformation may be found. The very nature of the bugeye and its work was such that only meagre records were preserved. The vessels were relatively small and there were no formal contracts between owner and builder, such as were drawn up for the construction of a clipper ship, and the bug-eyes were laid down without benefit of naval architects such as those who designed many of the large Gloucester fishermen. The bugeye skippers kept no logs as masters of deep water ships did, and it is from logs that so much of our information about ships has been obtained.

Carpenters' certificates and sail-makers' note-books produced a considerable volume of data; builders' half-models, although scarce, were available in sufficient numbers to make possible a representative portrayal of the type. The author's careful observation of rigging and details of existing vessels, and personal interviews with surviving builders, enabled him to round out the picture. His search for, and inclusion of data on patents has settled questions, among those of us who have taken an interest in bugeyes, regarding the date of origin of the patent stern and certain other details. His discovery of the use of the adjustable hawse-hole compass by at least one prominent builder will be of great interest to many readers. His critical analysis of various legends, attributable to romantic and inaccurate writers who, for fifty years or more, have been making utterly absurd statements about the origin of the generic name 'bugeye,' and about sundry non-existent qualities of these vessels, is most welcome.

This theme might well have been enlarged upon to the extent of making some objective appraisal of the bugeye's relative speed. There may be found in print numerous loose statements about the remarkable speed of these vessels. Given the right conditions, a bugeye can unquestionably sail fast (the statement that the *Norma* logged 14 knots is entirely credible), but with the customary rig, the bugeye is under-canvassed and unable to make much of a showing in light air. It should be borne in mind that these vessels were developed primarily for oyster dredging, which was carried on from October to April, during which period severe conditions of wind and weather were likely to prevail. A large rig and great speed were undesirable for dredging and the 'drudge' boats were usually worked under reefed sails whenever it blew fresh. Nevertheless, the bugeye's skipper, like the skipper of practically every other type of sailing vessel, liked to brag about his boat's speed, and so the builders were constrained to develop an easily driven model. A bugeye, matched against a smart modern yacht of comparable size in a beat to windward, would be badly outsailed, but on a broad reach in a strong breeze she should give a good account of herself.

A fair appraisal of the qualities of any vessel or type can be made only with the full knowledge of the work for which she was developed, and the final answer lies in whether she served the purpose well or poorly. How well bugeyes were suited to their purpose is clearly brought out in this book.

Chesapeake Bay Bugeyes is probably the most comprehensive description yet published, dealing with relatively small vessels. It would seem quite possible to select a set of lines and a sail plan from the plates, and build a bugeye complete to every detail of rigging and iron work by following the careful descriptions in the text. The

completeness of the detail may in itself seem laborious to some readers, but the facts and the data are there, and it was obviously the author's principal aim that they should be presented completely even at the expense of literary polish.

Not the least interesting part of the book is that containing the appendices, which deal, respectively, with the origin of the word, 'bugeye'; oyster gear; specifications of a large bugeye with principal scantlings; rigging specifications, and a roster of bug-eyes. There is also in this section a map of Chesapeake Bay with the names of the principal places at which bugeyes were built. It is to be regretted that this was not made larger and clearer, and placed among the folded plates.

The plates contain an excellent selection of drawings, only one of which has ever been previously published. They cover the range from a small brogan to the *Mollie V. Leonard*, one of the largest of the bugeyes, and illustrate practically every variation of the true bugeye type. Of particular interest is the drawing of the *Coronet*, a 'chunk-built' bugeye well known on the Bay for fifty years. The author is fortunate in the possession of the builder's half-model of this vessel, in which the logs comprising the bottom, are accurately represented in the model by their individual counter-parts. This feature is shown in the drawing.

The author's statement that sail covers were practically unknown on the Bay work-boats is open to some question. A photograph of a large fleet of oyster vessels tied up in Baltimore harbor was taken by the Bureau of Fisheries at sometime around 1889-1892, and there are several sail covers plainly discernible in this excellent picture, now in the possession of the Smithsonian Institution. It is said that when a group of Bay boats was packed into a slip, the men on the outermost ones would walk ashore over the bowsprits of their own vessels on to the main booms of the next and succeeding ones. Hence there was evidently an especially good reason for the use of sail covers, in Baltimore at least, by skippers who took pride in the appearance of their vessels.

A few errors and inconsistencies are to be found, by way of variety; Northumberland County, Virginia, has, somehow been transposed to the Eastern Shore, although it is actually on the tip end of the celebrated Northern Neck. In Appendix IV we find bobstays on two bugeyes made of 2-1/2" chain; that on a larger vessel of 3/4" chain. Apparently two different observers collected the data; one measured the length of the link and the other, more properly, measured the diameter of the bar stock of which the links were made. Two spellings of one word appear; 'strake' and 'streak.' An unfortunate omission occurs on page forty-eight where a detailed description of a builder's method of laying off a mast appears without mention of the drawing to which reference must be made in order to follow the description intelligently. This drawing appears on a corner of Plate IV c.

But minor errors and omissions like these cannot seriously detract from this book; it must be considered as unique as the bugeyes themselves, which were built in the best 'log gunnle' tradition of the Chesapeake Bay.

JOHN G. EARLE

Moylan, Pennsylvania

HAMILTON OWENS, *Baltimore on the Chesapeake* (New York: Doubleday Doran, 1941), 6" x 9", cloth, 342 pages, 8 plates and plans, end-papers. \$3.50.

Hamilton Owens can write. He has a sharp, clear, witty style that holds one's interest. His knowledge of the peculiar traits and character of the peoples who make up Maryland is little short of remarkable. As a social or economic historian of his city or his state, he could set a standard difficult to equal. In fact this book is so much such a history and not one of a maritime bent (there is a specific apology for including a chapter on the rise and fall of the Baltimore Clipper schooner) that had the book not been published in *The Seaport Series*, THE AMERICAN NEPTUNE would find it outside its field. But because it is offered to the public as a history of a maritime city written from the viewpoint of the harbor, and not just a city history, the book's failure to fulfill its purpose must be noted.

First of all it is apparent to anyone familiar with Maryland history that Mr. Owens has done very little original research. Even though there is a complete absence of source notes or a bibliography one can easily see the work of Wykoff, Semmes, Cranwell and Crane, Footner, Chapelle, Scharf and others at the bottom of his ink well almost to the exclusion of the great mass of original materials in the Hall of Records at Annapolis, the Maryland Historical Society, or the Baltimore Custom House.

Second, Mr. Owens seems to have no background of general maritime history against which to appraise the waterfront doings in Baltimore and consequently know when he is on firm ground instead of the quicksand of tradition. For instance, he states (p. 150) 'The Peace of Amiens, in 1801, was a blow to all American shipping and especially to that of Baltimore.' True enough, but it is incompatible with a statement two paragraphs later: 'The shipyards were fairly busy, too, for there were two sloops-of-war being built on the Point. One of these was the *Maryland*, the other the *Chesapeake*, a vessel soon to be involved in an incident of great import.' Aside from the discrepancy, it is difficult to see what the *Maryland*, launched 3 June 1799 and at sea 12 September 1799, and the *Chesapeake* launched 20 June 1799 and reported off the mouth of the Mississippi 26 February 1800 had to do with shipbuilding in Baltimore in 1801. Of course, 'the incident of great import,' the *Chesapeake-Leopard* affair summarized on pages 156-157, had nothing to do with the Baltimore-built sloop; the vessel really involved was the frigate *Chesapeake*, built at Norfolk, Virginia. His sloop *Chesapeake* (re-named *Patapsco* to avoid just what Mr. Owens has done—get confused with the frigate) was sold out of the Naval service at Philadelphia in June 1801, six years before the *Leopard* affair.

Third, the book fails as a maritime history because Mr. Owens evidently so fears his work might become a dry catalog of dates and names that it lacks a sufficient degree of precision for even a popular history. As examples: on page 48 we are told one Benjamin Nelson built a 'railway and stocks' at Fells Point. No date is given, but apparently this was done about 1760. If so, it would probably have been the first marine railway in what is now the United States. Again, sometime after 1819 (the last date preceding the statement) we are informed 'The task of charting and marking the channel was completed,' an event of no small importance in the history of any port. The reader certainly should be told by whom and when it was done. Another, page 142, it is said a vessel named the *Chesapeake* sailing from Balti-

more flew the first 'American flag ever seen in the Ganges.' A date would be interesting since it might prove the log of the Philadelphia ship *United States* and the records of the East India Company completely erroneous.

Fourth, the absence of a technical knowledge of ships and shipping is painfully obvious. Now anyone writing about any port on the Chesapeake would be hard put to it to avoid knowing that bugeyes for the past fifty years generally have been framed and planked in the conventional manner, and not log bottomed. Yet Mr. Owens tells us (p. 53) 'There are fewer bugeyes being built [actually the last was built in 1918] because of the growing scarcity of timbers [logs] large enough for their peculiar bottoms.'

Entirely neglecting the history of the development of the sail plan in general and on the Chesapeake in particular (to say nothing of the history of the oyster fishery), Mr. Owens states that the sharply raking masts are due to such considerations as: in fixing the shrouds, they are led down to the rails plumb from the mast, thereby gaining the effect of a tripod. He completely forgets a true Bay Craft always works with slack lee shrouds. Or that the masts are raked to keep the deck space clear for oyster dredging gear. In this he overlooks the fact that the raking masts were in use many score of years before dredging was introduced to the Chesapeake. These are bad enough, but to seriously maintain that the extreme difference in draft between a Baltimore Clipper's bow and stern—the drag in other words—was designed so that when loading along shore where there was no wharf, the vessel could be run ashore, and then thanks to the raking stern and sloping keel '... it would be easy to push her off again' is ridiculous.

Finally the book is a failure as a maritime history because of the great mass of extraneous materials included and equally large amount of pertinent events excluded. It is admissible of course, to give considerations to events (such as changes or extensions of those means of transportation feeding the harbor, or the organization of banks financing shipping) which influence the waterfront, but these should be kept in their proper proportions. Thus we are given an account of the usefulness of the Baltimore and Ohio Railroad during the Civil War, we are told nothing of the blockade running of slaves northbound or of Confederate sympathizers southbound. While the love-life of Betsy Patterson and Jerome Bonaparte takes up pages, the rise of steamboating and the story of the myriad of river steamers plying the Bay with one terminus in Baltimore are forgotten. While there are dozens of authentic contemporary portraits of Baltimore vessels, of merchants, and of the harbor, we are shown only such illustrations as a photograph of what is said to be a model of Thomas Boyle's *Chasseur*, vintage War of 1812, carrying Howes double topsails, patented about 1852; a lithograph of Baltimore in 1752 done by Currier about a century later; or a fanciful river view of the city in 1834, showing peaked mountains in the background and a cliff-faced Federal Hill towards the foreground!

Devon, Pennsylvania

M. V. BREWINGTON

WILLIAM G. SALTONSTALL, *Ports of Piscataqua* (Cambridge, Massachusetts: Harvard University Press, 1941). 7½" x 10¾", cloth, 244 pages. 16 plates, 2 maps. \$3.50.

Blessed with one of the finest natural harbors on the Atlantic Coast, great stands of excellent timber, proximity to the fishing grounds, and an inadequate agricultural hinterland, it is not strange that the Piscataqua River basin became the seat of extensive maritime activity almost as soon as white men discovered it. It is strange that the historians have neglected its absorbing and in many ways unique story for so long. Perhaps that is a gain, for had the telling fallen into the hands of a less capable searcher for facts than Mr. Saltonstall much of the interest must certainly have been lost.

It would serve no useful purpose here to outline what the author has to tell. Suffice to say beginning with the earliest explorations, Mr. Saltonstall has touched upon the entire maritime scene in what is now the Portsmouth Custom House District. Shipbuilding, foreign, coastal, and river trading, privateering, and naval histories are all given their due. He has done this with just enough detail to make a well-rounded picture for the general student. In addition copious notes and an intensive bibliography supply adequate leads for the specialist who wishes to learn more of the development of his own phase around the Piscataqua. The care with which Mr. Saltonstall has fulfilled his task is evident on every page: if anything of even secondary importance has been missed, especially in the little known period prior to 1775, it is indeed buried deep and probably lost. Except in the mast trade, the Piscataqua was never in the superlative. Hence no attempt has been made to advance claims so customarily found in regional histories: that Portsmouth was in any way 'the first, the biggest, the best.' A true sense of proportion has been maintained throughout and mistakes, failures, and shortcomings are considered along with successes and triumphs.

In only one particular does the book leave anything to be desired, the quantity of illustrations. One wishes the publishers might have been somewhat more liberal on that score: they designed and made a beautiful book in binding, paper, and composition and they equipped it with an excellent index, but pictures of four Piscataqua-built vessels, two of Portsmouth itself, and four merchants and shipmasters are not sufficient to fix the shifting image of three centuries of growth and change.

It is hoped that Mr. Saltonstall will continue his maritime researches, perhaps moving down the coast to Newburyport.

M. V. BREWINGTON

Devon, Pennsylvania

JOHN B. MORDECAI, *A Brief History of the Richmond, Fredericksburg and Potomac Railroad* (Richmond: Privately Printed by the R. F. & P. R. R., 2nd. edition, 1941). 7¾" x 10¾", paper, 87 pages, 21 plates, map, tables, index.

On 25 February 1940, on the 106th Anniversary of the Company, the R. F. & P. Railroad issued in mimeograph form a brief history of its activities prepared by Traffic Manager J. B. Mordecai. It is a pleasure to note, the need for wider dissemination being felt, that a reprint from type was issued by the Company in June 1941.

While we can not be concerned here with the activities of the railroad proper, it should be noted that the company was largely instrumental in fostering steam navigation on the Potomac River. The through stage-coach lines were gradually absorbed and operated by the railroad as its iron rails crawled slowly northward from Richmond, but the steamboat route from Washington to Aquia and Potomac Creeks remained an all important link in the transportation system until within comparatively recent times.

In 1815 the *Washington*, described and illustrated by J. B. Marestier in his celebrated *Mémoire*, was the first Potomac steamboat on the run (THE AMERICAN NEPTUNE, I, No. 4, Plate 15). A quarter of a century later Charles Dickens penned his memorable description of a journey by boat, stage, and rail from Washington to Richmond (*American Notes*, 3rd ed., London, 1842, II, 3-17).

Mr. Mordecai's book forms a valuable record. It is not only written in a highly interesting manner, but the illustrations well amplify the text. An amusing feature is the facsimile reproduction of several old newspaper advertisements, both of the railroad and of its chief competitor, the Baltimore Steam Packet Company, whose line of steamboats on the Chesapeake paralleled the 'Inland Route' of the R. F. & P. These ads are characterized by their caustic comments and each route urged prospective travellers to pay no heed to the 'malicious falsehoods' circulated by its rival.

ALEXANDER C. BROWN

The Mariners' Museum

CHARLES NORDHOFF, ED., *In Yankee Windjammers* (New York: Dodd Mead & Co., 1940). 6" x 8 1/2", cloth. vii + 401 pages. \$2.75.

Charles Nordhoff, co-author of the *Bounty* series, has edited a new edition of the seafaring books written by his grandfather of the same name. The elder Nordhoff ran away to sea at the age of thirteen and after following the profession for nine years he went ashore for good and set about to recount his experiences. This resulted in a series of three excellent books entitled: *Man-of-War Life*, *The Merchant Vessel*, and *Whaling and Fishing*, the first of which appeared in 1855.

Having suggested to both editor and publisher that such a new one-volume edition of Nordhoff's books would be welcome, it is the somewhat embarrassing duty of this reviewer to point out that the resultant book seems to fall short of the mark, for although splendid as far as it goes, the opportunity to contribute a volume of permanent value was missed. A critical introduction could have gone a long way to place the all but forgotten elder Nordhoff in his proper relation to Dana, Melville and other *ante-bellum* American sea story writers which is no more than he deserves. Such a monument might well have been worthy of the inclusion of a picture of the author and a listing of his books.

An unfortunate error in the jacket 'blurb' places Nordhoff with Commodore Perry on the famous 'open door' voyage to Japan. Actually, as one may see from the book, the embryo maintopman was with Biddle on the *Columbus* in 1846 seven years before. On this occasion the door was knocked upon but remained closed.

ALEXANDER C. BROWN

Ship Registers of New Bedford, Massachusetts, Volume III, 1866-1939 (Boston: The National Archives Project, W. P. A., 1940). 8½" x 11", paper. xxii + 234 mimeographed sheets. Available from The National Archives Project, 403 Federal Building, Boston.

Ship Licenses issued to vessels under twenty tons and Ship Licenses on Enrollments issued out of the Port of Newport, Rhode Island, 1790-1939, Volume II (Providence: The National Archives Project, W. P. A., 1941). 8½" x 11", paper. viii + 333 + 56 pages. Available from the Survey of Federal Archives, W. P. A., Providence, Rhode Island.

Ship Registers and Enrollments of Providence, Rhode Island, 1773-1939, Volume I, Parts 1 and 2 (Providence: The National Archives Project, W. P. A., 1941). 8½" x 11", paper. vii + 1518 pages. Available from the Survey of Federal Archives, W. P. A., Providence, Rhode Island.

Ship Registers and Enrollments of New Orleans, Louisiana, Volume I, 1804-1820 (University, Louisiana: Hill Memorial Library, Louisiana State University, 1941). 8½" x 11", paper. xv + 171 mimeographed sheets. Available from the State Supervisor, 204 Old Criminal Courts Building, Tulane and Saratoga Streets, New Orleans, Louisiana.

The project for the publication of ship registers and enrollments, described by Dr. Philip M. Hamer in *THE AMERICAN NEPTUNE*, I (1941), 165-166, has advanced rapidly in recent months. The Massachusetts project has issued the final volume of the New Bedford registers, and the final volume for Newport has appeared in Rhode Island. The first volume for Providence—a giant in two parts—includes all registers and enrollments for that port down to the present day, while the New Orleans first volume covers only sixteen years of the early nineteenth century. The reference value of these publications is very great, and it is to be hoped that even under war-time conditions means may be found to issue further volumes.

Catalogue of the Robert L. Hague Collection (Newport News: The Mariners' Museum, 1941). 5" x 7¾", paper. 64 pages, 2 illustrations. Publication No. 9 of The Mariners' Museum. 50¢.

A catalogue of the collection bequeathed to the Museum by Robert Lyons Hague (1880-1939), which was briefly mentioned in *THE AMERICAN NEPTUNE*, I (1941), 314.

THE MARINERS' MUSEUM, *The Elwin M. Eldredge Collection* (Newport News, Va., 1941). 3¾" x 7", 4 pages, 1 colored plate, 1 illustration. Gratis.

A brief description of what is probably the world's largest collection of steamship pictures with notes on James and Bard, steamship portraitists.

NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY, *For National Defense* (Newport News, Va., 1941). 9½" x 12½", 44 pages, illustrated.

A fine photographic history of the work this famous shipyard is doing in the interest of national defense with a list of all the vessels built in the yard (407) from the yard's beginning (1891) to date.

CLIFFORD D. MALLORY, ALEXANDER C. BROWN, and OTHERS, *Dilemma* (Newport News, The Mariners' Museum, 1941). 4 pages, illustrated. Gratis.

A reprint of articles originally published in *Yachting*. All relate to the well-known yacht *Dilemma* now preserved at The Mariners' Museum.

The Chesapeake and Delaware Canal: an Inland Waterway from Delaware River to Chesapeake Bay, Delaware and Maryland (Philadelphia: United States Engineer Office, Customhouse, issued May 10, 1938, revised May 1, 1941). 8" x 10½", paper, 26 pages, 12 illustrations, 6 maps and tables (one folding). 25¢.

History of the D. & C. Canal, officially opened 17 October 1829, to the present.

A. J. WALL, 'The Sylvan Steamboats on the East River—New York to Harlem,' *Steamship Historical Society of America Reprint Series No. 1* (Salem: Steamship Historical Society, c/o Peabody Museum, 1941). 5½" x 8½", paper. 16 pages, 8 illustrations. 30¢.

Mr. Wall's article on the Sylvan steamboats, illustrated with paintings by James Bard and direct photographs, appeared in the *New York Historical Society Quarterly Bulletin*, VIII (1924-1925), 59-72, and is now reprinted in offset as the first of the Steamship Historical Society's Reprints. This series is designed to make available at cost reprints of scarce articles and sections of out-of-print books relating to steamship history. A New York subject was chosen as the December 1941 meeting of the Society was scheduled to be held in New York City.

LLOYD A. BROWN, *Jean Domenique Cassini and his World Map of 1696* (Ann Arbor: University of Michigan Press, 1941). 6" x 8¾", cloth. 79 pages, 9 illustrations, index.

This delightful little book by the Curator of Maps in the Clements Library was written to explain the significance of Cassini's world map, which had previously been reproduced in collotype facsimile by the Library. It contains, among other things, a translation of Cassini's account of his expedition to the Cape Verde Islands and the West Indies. The book was printed by Edmund Thompson at Windham, Connecticut, and the illustrations are by the Meriden Gravure Company, who also made the excellent facsimile of the map. It is an excellent example of scholarship made palatable by good writing and good typography.